Postgraduate Courses—page 1429

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ORIGINAL ARTICLES

SEASONAL INCIDENCE AND PRECIPITATING CAUSES OF HEMORRHAGE FROM PEPTIC ULCER 1379
R. S. Boles, M.D., and M. P. Westerman, M.D., Philadelphia

OBSERVATIONS ON THE DIAGNOSIS, TREATMENT, AND COURSE OF GASTRIC ULCER 1383
Erwin Levin, M.D., Cleveland; W. L. Palmer, M.D., and J. B. Kirsner, M.D., Chicago

ACQUIRED AGAMMAGLOBULINEMIA 1390
H. H. Zinneman, M.D.; W. H. Hall, M.D., Ph.D., and B. I. Heller, M.D., Minneapolis

PHARMACOLOGICAL EFFECT OF VARIOUS DRUGS ON MICTURITION 1393
R. E. Van Duzen, M.D., Dallas, Texas

PRINCIPLES OF NEUROMUSCULAR REEDUCATION 1396
O. L. Huddleston, M.D., Ph.D., Santa Monica, Calif.

CLINICAL NOTES

A NEW ILEOSTOMY-COLOSTOMY DEVICE WITH A DISPOSABLE PLASTIC BAG AND NO CEMENT 1398
J. DeW. Fox, M.D., and B. E. Brush, M.D., Detroit

THE TECHNIQUE OF OPENING THE STENOTIC MITRAL VALVE 1400
C. S. Beck, M.D., Cleveland

THE IN-BED SCALE 1401
E. F. Schmerl, M.D., and A. L. Upton, M.D., Oakland, Calif.

SPECIAL REPORTS

Council on Foods and Nutrition

THE JOSEPH GOLDBERGER AWARD IN CLINICAL NUTRITION—1954 1402

ACCEPTED FOODS 1403

Council on Physical Medicine and Rehabilitation

APPARATUS ACCEPTED 1403

EDITORIALS

Uterine Fibroids 1404
Safe Driving Day 1404
The General Practitioner's Award 1405
A Heartening Example 1405
The Woman's Auxiliary 1406
National Fund for Medical Education 1406

ORGANIZATION SECTION

Tennessee State Medical Association 1407
Third Conference on Medical Care in the Bituminous Coal Mine Area 1408
Safeguarding the Worker's Health 1409

REGULAR DEPARTMENTS

Medical News 1410
Meetings 1416
Examinations and Licensure 1417
Deaths 1418
Foreign Letters:
Austria: Neurinoma of the Acoustic Nerve. 1421
Brazil: Clinical Hematological Study. Tetanus in Children. Vagotomy in Treatment of Peptic Ulcers. Diagnosis of Schistosomiasis. 1421
Chile: Bronchiectasis. Bacterial Endocarditis. 1422
England: Future of Medical Research. Review of General Practice. Health Costs Reduced. Disposal of Radioactive Waste. Women's Views on Cancer. Smoking as Cause of Cancer Challenged. Unemployment of Interns. Another Health Center. Hospitals Left Vacant. Freer Movement for Physicians. Reduced Budget Holds Up Operations. Death from Transfusion. British and American Students. Spastic Paralysis. 1423
Switzerland: Snakebite. Mass BCG Vaccination. 1426
Correspondence:
Clinical Thermometers and Urinometers. Serum Prothrombin Consumption Test. Misused Expressions. Aplastic Anemia and Carbon Tetrachloride. 1427
Council on Medical Education and Hospitals:
Postgraduate Continuation Courses for Physicians 1429
Medicolegal Abstract. 1448
Business Practice:
Insurance for the Physician 1448
J. D. Dorsett, New York
Medical Literature Abstracts 1451
Book Reviews 1466
Queries and Minor Notes:
Epilepsy. Vision Test. Osteogenic Sarcoma in Pregnancy. Gunshot Wound of Aorta. Lens Replacement after Cataract Removal. Status of Craniotomy. Cystic Fibrosis of Pancreas. Sensitivity to Horse Serum. Spalteholz Technique for Specimens. Eczema. Electrocardiographs. Postpartum Amenorrhea. Deformities in Stillborn Infant. BCG Vaccine. Cancer of the Prostate. Desensitization to Wasp Sting. Acne Vulgaris. Sperm Count Following Vasectomy. 1467

WASHINGTON NEWS

Expansion of Health Officers' Reserve. Survey of Narcotic Addiction. Plans to Make Military Career More Attractive. Cost of Voluntary Health Insurance. Military Surgeons' Meeting. Report on Health Conditions in Alaska. Adv. Page 13
National Organizations of Medical Interest. ..... Adv. Page 18
Tonics and Sedatives ..... Adv. Page 62
The Bright Side ..... Adv. Page 79
Books Received. ..... Adv. Page 84
Index to Advertisers ..... Adv. Page 96

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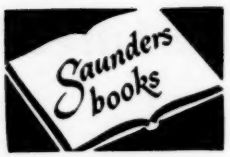

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SEASONAL INCIDENCE AND PRECIPITATING CAUSES OF HEMORRHAGE FROM PEPTIC ULCER

Russell S. Boles, M.D.
and
Maxwell P. Westerman, M.D., Philadelphia

After all the years that physicians and surgeons have been contending with the dilemma of peptic ulcer, one would think that by now there would have been some substantial progress made toward its solution. Instead, we have witnessed a dreary pursuance of time-worn theories that base the etiology of ulcer on constitution and temperament, inflammation and infection, neurogenic and psychiatric influences, and, finally, on an excess of hydrochloric acid. Incidentally, the devotion of the acid advocates to their cause must be admired when one contemplates the heartbreaking futility that has been so consistently encountered through the years in an attempt to eradicate ulcer by eradicating acid. All medical and surgical treatment for over a generation has been designed toward this end, despite the fact that no one knows whether acid is the *sine qua non* it is so popularly supposed to be in the etiology of ulcer. It is clear to the unprejudiced that one of the greatest deterrents to a broader study of peptic ulcer has been the persistent adherence to the "no acid, no ulcer" dictum first proclaimed by Schwarz over 40 years ago. This "venerable fallacy" appears to have lost none of its hypnotic influence, and until it does we will probably continue to grope along, grasping the shadow for the substance, prescribing newer and more expensive drugs as fast as the manufacturers can produce them; and for another 50 years we will probably continue to experiment with physiologically unsound and increasingly mutilating operations.

Speaking of operations, we may hope that the virtues being proclaimed for subtotal resection will endure, but the operation acknowledgedly loses some of its glamour when one recalls the exaggerated benefits accorded to gastroenterostomy 20 years ago by the surgical masters of that day. Sir Berkeley Moynihan said of gastroenterostomy that no operation in surgery had ever produced more striking or swifter results. Thereafter, however, Sir Berkeley spoke as follows: "Results by no means as happy were soon witnessed, and in cases whose numbers seemed quickly to mount up the ultimate consequences of the operation were disastrous." Mindful, then, of the disillusionments suffered regarding various operations for peptic ulcer, one may be forgiven today for not becoming too enthusiastic about the extravagant claims being made for subtotal resection until a follow-up period of at least 10 years has ensued. At the end of this time the surgical mortality and sequelae may have become less important, but the real morbidity from the operation will surely have begun to assert itself. Few would deny that we are still treating peptic ulcer blindly, and consequently with embarrassingly poor results; until its cause is known, little else can be expected. Opinion continues to shift between medical and surgical management. In recent years the trend has been to treat uncomplicated duodenal ulcers medically. Gastric ulcer, because of its unpredictability, is usually treated surgically. A splendid review of the gastric ulcer problem based on a study of 1,000 cases has recently been presented by Smith and her associates.[1]

One of the most serious complications of peptic ulcer is manifest hemorrhage, with which this paper is primarily concerned. Hemorrhage manifested by either hematemesis or melena, and not necessarily massive, is said to develop in 85% of cases of peptic ulcer. Statistics indicate, however, that this figure may vary widely in different countries. For instance, the number of such patients hospitalized because of massive hemorrhage, which is approximately 25% in this country, is reportedly greater in Great Britain, Germany, and the Scandinavian countries. This should excite further study, since it suggests that geographical and environmental influences may have some bearing on the causes and behavior of peptic ulcer. A number of the factors in peptic ulcer are difficult to evaluate from available statistics; perhaps chief among these is hemorrhage. Perhaps the most glaring cause of

From the Medical Division of the Philadelphia General Hospital.
Read before the Section on Gastroenterology and Proctology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 22, 1954.
E. Douglass Burdick, professor of statistics at the University of Pennsylvania, assisted in the preparation of this paper.
1. Smith, F. H.; Boles, R. S., Jr., and Jordan, S. M.: Problems of the Gastric Ulcer Reviewed, J. A. M. A. **153**: 1505-1508 (Dec. 26) 1953.

statistical confusion is lack of proof in many cases that peptic ulcer was the actual cause of hemorrhage. Some authors are careful about these matters, but in many published cases, search as one may, one fails to find that an actual ulcer was demonstrated by roentgenogram, gastroscopic examination, operation, or autopsy. Before the advent of these diagnostic procedures, peptic ulcer was assumed to be the cause of massive hemorrhage, and the assumption still appears to content too many. As a first symptom of peptic ulcer, hemorrhage is reported to occur in 2.2% to 50% of patients; recurrent hemorrhage in patients admitted to the hospital varies from 11% to 57%. An extraordinary range of incidence may be observed in the mortality rate from hemorrhage, that is, from 0.9% to 26%. Strange as it may seem, even the postmortem statistics on death due to hemorrhage vary from 0.37% to 55.8%.[2]

The great discrepancy in the figures dealing with hemorrhage, and, indeed, in the figures dealing with practically all aspects of peptic ulcer, is difficult to explain. Any number of thoughts come to one's mind. First is a strong suspicion of gross carelessness in compiling statistics. The term peptic ulcer, for instance, is indiscriminately used to include gastric and duodenal ulcer. This is improper because, as far as we know, peptic ulcer is not a specific lesion; for this reason it has not been accepted as a diagnosis in the official "Standard Nomenclature of Diseases and Operations" since 1933. Furthermore, there exists a legitimate difference of opinion as to whether "peptic ulcer" of the stomach and duodenum are even one and the same thing. For the sake of accuracy, then, one should adhere to the official diagnosis of ulcer of the stomach or ulcer of the duodenum and not resort to the unofficial and unscientific diagnosis of peptic ulcer. The term peptic ulcer disease is of course inadequate, although it does serve a useful purpose. Other reasons for statistical confusion become obvious. For instance, geographical and environmental influences, to which we have alluded, and which are of major importance in understanding peptic ulcer, are rarely subject to evaluation. The same is true of the social and economic status of the patient, as well as the sex, race, color, and even religion, all of which must exert their peculiar influences in this disease.

Mindful of the possibility that peptic ulcer might be due primarily to deficiencies of the circulation and vascular system,[3] and realizing that meteorologic conditions have an effect on these systems, we were curious to learn more about the relationship between the weather and manifest hemorrhage. It is well recognized that the symptoms of peptic ulcer follow a seasonal pattern, but what change takes place in the vascularity of the ulcer at such times is purely conjectural. There is little to be found in the domestic or foreign literature on this subject. Also, many of the available statistics are not acceptable because they are based more on presumption than proof that peptic ulcer was the cause of hemorrhage, and, in most reports, no mention is made of whether the ulcer was gastric or duodenal. The collective material nevertheless indicates a greater incidence of hemorrhage in the fall months, significant peaks occurring in October, November, and December; this was observed especially in the Scandinavian countries.[4]

With the idea of determining the seasonal incidence of hemorrhage from gastric and duodenal ulcer, as observed in Philadelphia, we analyzed all of the cases admitted with this complication to the Philadelphia General Hospital over a period of five years (1949-1953). We accepted for this analysis only those cases in which ulcer was demonstrated by roentgenographic examination, operation, or autopsy. Gastroscopic examination occasionally supplemented other methods of examination. In the case of gastric ulcer we recognized that the diagnosis of benign ulcer based on clinical and roentgenographic evidence is unreliable, as indeed the pathological diagnosis may be at times. However, in all of our cases of gastric ulcer the roentgenographic evidence and clinical history indicated a benign lesion; in 75% of the cases the diagnosis was confirmed by operation or autopsy. We further determined whether there was hematemesis, melena, or both. An attempt was also made to ascertain if hemorrhage was precipitated by anything in particular, so that patients might better be instructed in its prevention.

There is a seasonal pattern for hemorrhage from both gastric and duodenal ulcer; there is a significant increase in the incidence of hemorrhage from duodenal ulcer during January, February, and March and during October, November, and December. The increased incidence of hemorrhage in the autumn months coincides with the notorious activity of duodenal ulcer symptoms in these months. It is surprising to note that the seasonal pattern for hemorrhage from gastric ulcer is quite different from that of duodenal ulcer, the peak months for gastric ulcer hemorrhage being January, February, April, May, and June, with a lull occurring in the latter part of summer and in the autumn months. The seasonal trends for hemorrhage from gastric and duodenal ulcer as shown in this study correspond closely to those observed by one of us (R. S. B.) in a group of patients with proved gastric and duodenal ulcer admitted to the Philadelphia General Hospital between January, 1935, and October, 1936.

At our request, Francis K. Davis Jr., meteorologist at the Drexel Institute of Technology, has prepared some meteorologic information that offers a possible explanation for the seasonal pattern of hemorrhage from duodenal ulcer. Davis reports as follows:

I investigated the possible relationship between these cases and atmospheric conditions and am reporting the result of a preliminary investigation involving temperature. It appears that the best correlation between the temperature element and the number of cases of hemorrhages from duodenal ulcers from

2. Ivy, A. C.; Grossman, M. I., and Bachrach, W. H.: Peptic Ulcer, New York, Blakiston Company, 1950, pp. 557-597.

3. Riggs, H. E.; Reinholt, J. G.; Boles, R. S., and Shore, P. S.: Qualitative Circulatory Deficiencies Observed in Peptic Ulcer: Chemical Composition of the Blood, Am. J. Digest. Dis. **8**: 383-387, 1941. Boles, R. S.; Riggs, H. E., and Griffiths, J. O.: The Role of the Circulation in the Production of Peptic Ulcer, ibid. **6**: 632-636, 1939. Palmer, E. D., and Buchanan, D. E.: On the Ischemic Basis of Peptic Ulcer: I. Historical Definition of Present Status, Ann. Int. Med. **38**: 1187-1205, 1953. Bishton, R. L.: Experimental Peptic Ulceration with Neurovascular Basis, Brit. J. Exper. Path. **31**: 316-320, 1950. Doran, F. S. A.: Aetiology of Chronic Gastric Ulcer: Observations on Blood-Supply of Human Gastric Mucosa with Note on Arteriovenous Shunt, Lancet **1**: 199-202, 1951.

4. Mossberg, O.: Bidrag till Kanednomen om prognose och behandling av stora blodningar vid Ulcul Ventriculi och Ulcus Duodeni, Hygiea **95**: 897-925, 1933. Naegeli, T., and Daubert, K.: Die Meteorotropen Einflusse auf Chirurgirch Erkrankenungen, Arch. klin. Chir. **274**: 576-589, 1952. Guldager, A., and Heintzelmann, F.: Manifest Ulcer Hemorrhage in Aarhus from 1918-1937, Ugesk. laeger **101**: 826-837, 1939.

month to month is obtained when temperature changes are used. This perhaps indicates that during periods of great temperature change some sort of stress is put on the body, which results in hemorrhage. To illustrate the possible relationship, three tables and three graphs have been prepared. Table 1 shows the normal

TABLE 1.—*Normal Temperature Change (Degrees Fahrenheit) During Each Month for Philadelphia, 1870-1950*

Month	Normal Temperature First of Month	Normal Temperature End of Month	Temperature Change
January	34	32	— 2
February	32	36	+ 4
March	36	46	+ 10
April	46	58	+ 12
May	58	68	+ 10
June	68	75	+ 7
July	75	77	+ 2
August	77	72	— 5
September	72	64	— 8
October	63	52	— 11
November	52	40	— 12
December	40	34	— 6

temperature on the first day of each month in Philadelphia, the normal temperature on the last day of the month, and the normal temperature change from the first day to the last. This table is based on an 80 year record. Figure 1 shows these normal temperature changes during each month in graphic form and

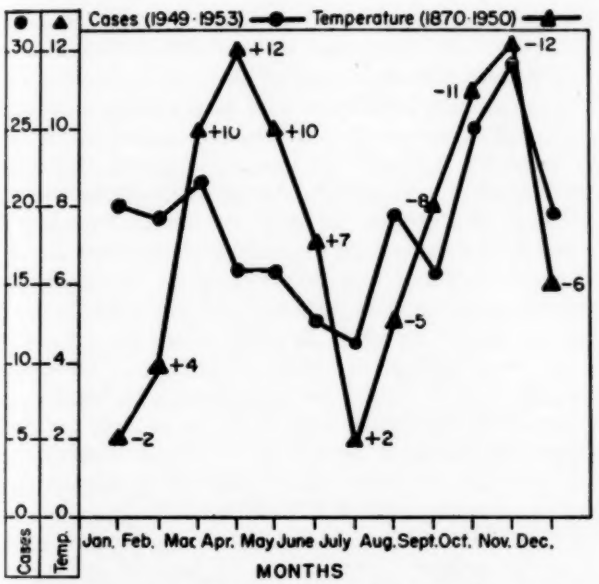

Fig. 1.—Temperature changes, 1870 to 1950, correlated with duodenal ulcer hemorrhage.

includes a curve of the cases of duodenal ulcer hemorrhage for each month (over a five year period) for comparison. The correlation is good, particularly for the last four months, when temperature changes are most pronounced. Table 2 shows the average monthly temperatures for Philadelphia for the five year

TABLE 2.—*Average Monthly Temperature (Degrees Fahrenheit) for the Five Year Period 1949-1953*

January	39.5	July	78.4
February	38.3	August	75.9
March	42.9	September	68.3
April	53.4	October	59.3
May	63.4	November	46.6
June	73.1	December	36.7

period from 1949 to 1953, inclusive, and table 3 shows the average temperature change from month to month for the same period. Figure 2 shows this average temperature change from month to month and includes the curve of the cases of duodenal ulcers for each month over the same period. It is quite noticeable that the first peak in the temperature change curve occurs between March and April, a little earlier than the long period peak illustrated in figure 1. This may explain the March peak

TABLE 3.—*Average Temperature Change (Degrees Fahrenheit) from Month to Month During the Five Year Period 1949-1953*

January to February	— 1.2
February to March	+ 4.6
March to April	+ 10.5
April to May	+ 10.0
May to June	+ 9.7
June to July	+ 5.3
July to August	— 2.5
August to September	— 7.6
September to October	— 9.0
October to November	— 11.3
November to December	— 9.1
December to January	+ 0.6

in the cases of duodenal ulcers, a peak that for this particular five year period comes a month earlier than might otherwise be expected. . . .

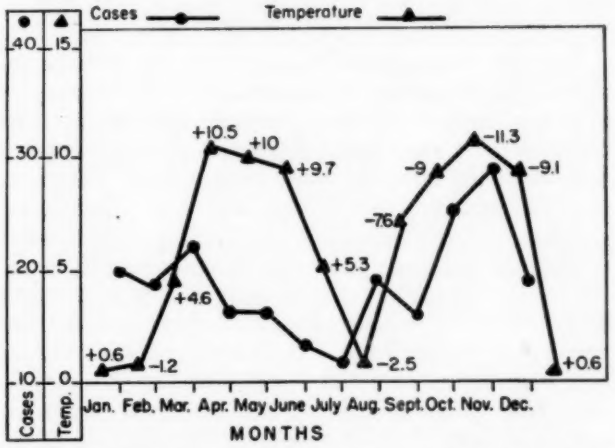

Fig. 2.—Temperature changes, 1949 to 1953, correlated with duodenal ulcer hemorrhage.

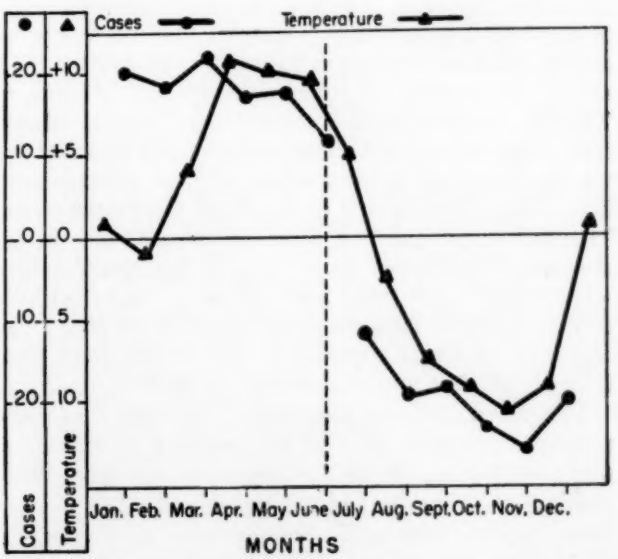

Fig. 3.—Positive and negative temperature changes, 1949 to 1953, correlated with duodenal ulcer hemorrhage.

Since half these temperature changes are positive and the other half negative, a third graph (fig. 3) was plotted, indicating not only the magnitude of the temperature change from month to month for the five year period from 1949 to 1953 but also the direction of the change. A positive value between two

months means the second month was warmer than the first (example: February to March); a negative value between two months means the second month was colder than the first (example: August to September). For comparison, the number of cases of duodenal ulcer hemorrhage during the first six months was plotted on the positive side and the number of cases of duodenal ulcer hemorrhage during the second six months was plotted on the negative side. These curves show very good agreement. The number of cases in January and February over this five year period seems to be a little on the high side, and this may well be due to the fact that during the five year period the months of January and February were far from normal. January was 5.7 degrees warmer than normal, and February was 4.2 degrees warmer than normal. No other month was more than 2.2 degrees from normal. While this is strictly a preliminary study, it certainly indicates that hemorrhages from duodenal ulcers may well be brought on by marked variations in temperature and that such variations may put stress on the body as it is forced to adjust. This fact, together with the observation that the number of cases is least in midsummer, would indicate that a warm climate with relatively little daily and seasonal variation in temperature would be the most suitable residence for those prone to suffer from duodenal ulcers. The present study is too brief to point to definite conclusions, but it certainly indicates that a more detailed study should be made.

It is our own opinion from a preliminary study that changes in barometric pressure exert a definite influence in precipitating hemorrhage through their effect on the circulation. A more detailed analysis of such changes as well as of the effect of other meteorologic conditions, such as humidity, precipitation, and wind velocity, will supplement our preliminary observations. An analysis of the age incidence for hemorrhage from gastric and duodenal ulcer showed that the peak incidence for gastric ulcer hemorrhage occurred a decade later than for duodenal ulcer hemorrhage. An analysis of age, sex, and race distribution of patients indicated that hemorrhage from both gastric and duodenal ulcer (320 cases) was more common in white patients (201 cases, or 63%) than in nonwhite (119 cases, or 37%), the ratio being almost 3:2. This ratio is of particular interest because the ratio of white to nonwhite persons in the population of the Philadelphia General Hospital for the five years during which the patients in this study were admitted was almost the reverse, or approximately 2:3 (41,913 to 72,449). In other words, although only 37% of all persons admitted to the Philadelphia General Hospital for the five year period were white, 63% of patients with hemorrhage from gastric or duodenal ulcer were white. This is without question a real difference, and, in the absence of any known selective factor that would induce white persons with ulcer hemorrhage to come to Philadelphia General Hospital and nonwhite persons to go elsewhere, it would appear that hemorrhage from ulcer is higher in white than in nonwhite patients.

In hemorrhage from gastric ulcer, about 82% of white patients were male, whereas only 62% of nonwhite patients were male. In hemorrhage from duodenal ulcer, about 87% of white patients and about 82% of nonwhite patients were male. Hematemesis alone occurred in 12 of the 94 patients with gastric ulcer, melena alone in 19, and both hematemesis and melena in 56. In the 226 patients with duodenal ulcer, hematemesis alone occurred in 25, melena alone in 101, and both hematemesis and melena in 95. The probability of melena being overlooked by patients whose illness does not seem serious enough for hospitalization must be very great, and because of this the reported incidence of hemorrhage may be subject to wide variations. It is our belief that hemorrhage (if not other complications) from peptic ulcer is largely preventable. For instance, we are convinced from experience that patients with gastric or duodenal ulcer should avoid occupations that require heavy lifting or straining. In support of this is the fact that approximately 30% of our patients with duodenal ulcer hemorrhage were engaged in such occupations: in a significant number it appeared that their work contributed in precipitating their hemorrhage. We believe this to be significant in spite of the fact that many of the male patients admitted to a large municipal hospital are occupied in heavy, laborious work. It was also noted that taxi drivers, firemen, and policemen figured conspicuously among those with hemorrhage.

We discovered several other possible precipitating causes of hemorrhage; perhaps the most frequent was overloading the stomach, especially with evening repasts that included an excess of beverage, usually alcoholic. While emotional stress and indiscretions in diet seem to favor activity and recurrence of ulcer, it was not possible to correlate either of these with hemorrhage unless the emotional stress was of a sudden and violent nature and the indiscretion in diet of a grossly quantitative rather than a qualitative character. An alcoholic debauch seems to favor hemorrhage, as may an intemperate use of tobacco. The underlying psychological disorders that induce intemperance may conceivably be of influence in precipitating hemorrhage. In any case, it is a safe assumption to regard an ulcer as being more susceptible to hemorrhage during its periods of activity in the spring and fall seasons. While the importance of adequate nutrition in the prevention and treatment of ulcer has been recognized for some time, it is not always remembered that nutrition is important in preventing hemorrhage. In 1941, one of us (R. S. B.) and his colleagues reported the results of a study on the chemical composition of the blood at monthly intervals on 52 patients during the course of a year. It was observed that significant deficiencies in serum total protein, albumen, and vitamin C determinations occurred, and it was suggested that such deficiencies induced a tendency toward hemorrhage.[5]

As patients seem to be in greater danger of hemorrhage during certain months of the year, they should be cautioned to be particularly careful at such periods, especially if they are past 40 years of age. Hemorrhage, as well as perforation, should be regarded as a preventable complication of peptic ulcer; its occurrence many times may be attributed to inattention on the part of the physician or lack of cooperation on the part of the patient. A more liberal research program might well lead to peptic ulcer itself taking its place among the preventable diseases, but to accomplish this it would be necessary to make a study of man's total environment, with adequate realization that an important factor in his environment is the weather. Apropos of research, one may well inquire why the dog has been the object of so much

5. Riggs, H. E.; Boles, R. S.; Reinholt, J. G., and Shore, P. S.: Observations on the Chemical Composition of the Blood and on Some Cardiovascular Reactions in Chronic Peptic Ulcer Throughout One Year, Gastroenterology **3**: 480-489, 1944. Riggs, H. E.; Reinholt, J. G.; Boles, R. S., and Shore, P. S.: The Diet and Chronic Peptic Ulcer: Its Relation to the Course of the Disorder, J. A. M. A. **124**: 639-641 (March 4) 1944.

experimental research on peptic ulcer when it is one animal that rarely suffers from peptic ulcer [6]—and, incidentally, it does secrete hydrochloric acid! Kirk [7] is of the opinion that gastric ulcer is probably more common in dogs than duodenal ulcer, and he believes "the most frequent cause of the former is necrosis of the gastric mucosa due to local disturbance in blood circulation following intense inflammation."

That atmospheric conditions exert an influence on the human economy has been known through the ages. Frequent reference to this fact is made in the Bible. Hippocrates admonished us, "Whoever wishes to pursue properly the science of medicine must procede thus. First, he ought to consider what effects each season of the year can produce; for the seasons are not alike, but differ widely both in themselves and at their changes. For with the seasons men's diseases, like their digestive organs, suffer change." Aesculapius and other profound students of human nature have stressed the influence of weather on man; Shakespeare was even aware of the danger of hemorrhage at certain seasons. The subject has lent itself, of course, to much superstition and chicanery. Despite this, however, it is a strange paradox that the medical profession, above all others, should have ignored, through the years, an influence that is regarded with all seriousness by those who are scientifically concerned with the health and habits of the fish, animal, and bird population of the world and with the effects of climate on agriculture. Even in business and industry, the effect of climate is always under the vigilant eye of experts.

In a review of "Climate and Man," published by the United States Department of Agriculture in 1941, Hambidge [8] calls attention to the effects of the climate on agriculture and animals, with the comment that it undoubtedly influences the well-being and performance of the latter. Discussions of comfort and disease in relation to climate and of health in tropical climate are also included. Observations of this sort should stimulate the medical profession to explore broader areas of clinical research in investigating the causes of diseases. When the United States Department of Agriculture and the country's leading institutes of technology, in cooperation with weather scientists, are constantly studying the well-being and better performance of animals, is it not incongruous that the medical profession has not recognized that climate may have a profound influence on the well-being and better performance of man? What a profitable field for clinical research lies in a comparative study of similar diseases in man and animals, with man being studied, like the animals, in his native environment!

Considering, then, the intrinsic influences of climate on the health of man, and indeed on the changing civilizations of mankind, it becomes inevitable that the horizon of physicians engaged in research must broaden. This will more quickly come to pass when they grasp the significance of some of the fundamental values in life, values that too often appear foreign to them as they toil away in the smug seclusion of their cloistered halls.

Rittenhouse Plaza (3) (Dr. Boles).

6. McGrath, J. T.: Personal communication to the authors.

7. Kirk, H.: Index of Diagnosis (Clinical and Radiological) for the Canine and Feline Surgeon, ed. 4, Baltimore, Williams and Wilkins Company, 1953, p. 520.

8. Climate and Man, Yearbook of Agriculture, 1941, United States Department of Agriculture.

OBSERVATIONS ON THE DIAGNOSIS, TREATMENT, AND COURSE OF GASTRIC ULCER

EVALUATION OF GASTRIC IRRADIATION AS AN ADJUNCT IN MEDICAL TREATMENT

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The differing viewpoints with regard to the treatment of gastric ulcer reflect insufficient knowledge of the lesion, its life history, the problem of differential diagnosis, and the results of therapy. The purpose of this paper is to review the records of selected patients in order to learn more of the cause and course of the ulcer, the diagnostic error, and the value of the various therapeutic procedures. The selection of patients for a study of this type is always difficult and subject to differing opinions. It has been and remains our contention that careful study utilizing all the diagnostic procedures available permits a sufficient accuracy of diagnosis to justify nonsurgical treatment in certain patients, not in all. Consequently, patients who were subjected to operation at once or within the first few weeks of observation because of definite or probable evidence of neoplasm have been excluded from the group. This study is based on 121 patients who received radiation therapy in addition to conventional treatment, as will be discussed later, and who were discharged from the hospital with the diagnosis of benign ulcer. The study will consider, first, the errors in diagnosis that were made with respect to the malignancy or benignancy of the lesions in these patients, and, second, the course of the ulcers proved to have been benign. In many respects the latter analysis is the more important phase of the investigation, for it concerns the causes, course, and therapy of benign gastric ulcer.

The patients were observed during the period from 1937 to 1954. In addition to the usual anamnesis, physical examination, gastric analysis, and examinations of

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the feces for occult blood, objective roentgen or gastroscopic evidence of gastric ulcer was obtained in all patients; exfoliative cytological study was possible in some instances. In addition to the routine medical program of hospitalization, diet, milk and cream, antacids, and in some patients gastric antisecretory drugs, therapy also included roentgen irradiation of the body and fundus of the stomach in an attempt to reduce the acid gastric secretion.[1] The total depth dose varied from 1,100 to 2,930 r. After discharge from the hospital, the patients were observed at frequent intervals in the outpatient department. An adequate follow-up by interview, telephone, or letter to January, 1954, was obtained in all patients except one.

DIAGNOSTIC ERROR

While there are many pathognomonic signs of malignancy in gastric lesions, there are no immediate pathognomonic criteria of benign ulcer. The problem of cancer masquerading as a benign ulcer has long been recognized. In this study, patients with lesions identified as malignant by standard criteria were transferred to the surgical service on completion of diagnostic evaluation. Histamine achlorhydria, the continued presence of occult blood in the feces, and the generally accepted radiological or gastroscopic signs of malignancy were considered indications for surgical resection. The incidence of error in referring patients for partial gastrectomy with a diagnosis of proved or probable cancer is not a part of this study. We have made no attempt to determine this figure for a variety of reasons; one is our acceptance of the fact that certain criteria, such as location on the greater curvature, are sufficient to justify resection even though they are not pathognomonic signs. The skillful use of repeated roentgen and gastroscopic examinations is mandatory in attempting the differential diagnosis of benign gastric ulcer. Neither the roentgenologist nor the gastroscopist should be expected to make a definitive diagnosis of benign ulcer at the first examination. To analyze the relative accuracy of gastroscopy and roentgenography would be superfluous, since the methods are not competitive.

TABLE 1.—*Incidence of Benign Gastric Ulcer in 116 Patients According to Age at Onset and Sex*

Age, Yr.	No. of Males	No. of Females
Under 20	1	0
20-29	10	2
30-39	25	8
40-49	25	6
50-59	23	4
60-69	7	3
70-80	2	0
Totals	93	23

The patients included in this report, therefore, are those in whom the total evaluation was compatible with benign ulcer and in whom repeated examinations in the first few weeks of observation were in accord with this diagnosis. In all of the 121 patients the roentgen examination was repeated at least once; in 104 both it and the gastroscopic examination were repeated at least once. One of the reasons for basing the analysis on the group of patients to whom radiation therapy was administered is the fact, as stated previously, that the use of this procedure constitutes clear evidence that a diagnosis of benign ulcer was made. Later the diagnosis of benign ulcer was proved erroneous in five patients, an error of 4.1%. Among the five patients with malignant ulcer, one lived three years and another four and one-half years after therapy. There is, we think, adequate basis for considering these two cases as instances of incorrect diagnosis rather than of malignant degeneration of benign ulcer. A third patient subjected to resection eight months after therapy was found to have an apparently benign ulcer, so diagnosed pathologically, and yet she died seven months later of metastases.

SIGNIFICANT CLINICAL FEATURES OF BENIGN GASTRIC ULCER

Excluding the 5 patients with neoplasm erroneously diagnosed as benign, the study then comprised 116 patients with benign gastric ulcer observed for variable periods, 78 for 5 years or more, one for 20 years. There were 93 males and 23 females, a ratio of 4:1. The age at onset of symptoms is shown in table 1. There was only one patient under 20 years of age. The greatest incidence was between the ages of 30 and 60 years; in approximately 10% of patients, symptoms first appeared after the age of 60 years. The duration of symptoms varied. Determining the exact duration is admittedly difficult; an attempt was made to relate the onset of symptoms to the first objective demonstration of an ulcer. It is important to note that 44 patients (38.2%) had symptoms of less than two years' duration and 26 (20%), of less than one year. Of the 44, 15 were in the fifth decade of life and 6 in the sixth decade. The oldest patient, with a brief history, was 70 years old.

The large number of patients who seemingly adapted themselves to their disease also is of interest. Fifty persons had symptoms for more than 5 years, the longest period being 50 years. The majority experienced recurrences every six months to two years; renewal of the medical program was followed by remission. Of interest and importance are patients with benign gastric ulcer who had atypical symptoms. In 20% of this group no definite food-pain relationship was noted; many of these had atypical symptoms ranging from mild dyspepsia to severe pain intensified by eating. Loss of appetite was noted in 28% and nausea, vomiting, and loss of weight in 22%.

THE RELATIONSHIP OF ACID TO BENIGN GASTRIC ULCER

Although the acid secretion in patients with benign gastric ulcer, on the average, is lower than in normal persons, the data in this series clearly confirm the basic premise that acid gastric juice, in no matter how small a quantity, is absolutely indispensable for the production and recurrence of chronic gastric ulcer; any procedure eliminating the acid entirely will result in healing of the ulcer and will prevent its recurrence. On the other hand, as is generally known, achlorhydria is not essential for the healing of the majority of ulcers. In every patient in

1. Ricketts, W. E.; Palmer, W. L.; Kirsner, J. B., and Hamann, A.: Radiation Therapy in Peptic Ulcer: An Analysis of Results, Gastroenterology **11**: 729 (Dec.) 1948.

the present series hydrochloric acid was secreted in the stomach; roentgen irradiation was administered in an attempt to diminish the output. In 41 patients radiation-induced achlorhydria lasted from three weeks to 13 years (table 2). The ulcer healed completely in 40 of the 41 patients. In no case did an ulcer recur during the period of anacidity; symptoms never reappeared during the phase of achlorhydria. In the one instance in which complete healing did not occur during the period of achlorhydria, the duration of the anacidity was brief, and the ulcer did heal in spite of the reappearance of acid. In nine patients the achlorhydria has continued from 18 months to 13 years; in all the ulcer healed and has remained healed to date. Prior to treatment this group had had symptoms with semiannual to biannual recurrences for periods ranging from 4 to 50 years (table 3). Further evidence of the importance of controlling acidity is indicated in table 4. The free acidity decreased less than 50% in 20 patients. In 2 of these the ulcer failed to heal, and in 14 it recurred within two years. In 41 patients the reduction in acid secretion was temporary, lasting 4 to 12 months. In 25 of this group the ulcers recurred soon after the acid returned to preradiation levels. In two patients ulcers failed to heal in spite of an appreciable reduction in hydrochloric acid. Tissue resistance to peptic digestion apparently was so diminished that the gastric mucosa could not withstand the very low acidity. The most striking results occurred in the group of 34 patients whose gastric acidity was reduced by 50% or more for at least one year; only 5 of these have experienced recurrences during the entire period of observation, encompassing 2 to 17 years.

TABLE 2.—*Radiation-Induced Achlorhydria (Forty-One Patients)*

Duration of Achlorhydria	No. of Patients	Patients in Whom Ulcer Healed	Recurrence During Achlorhydria
Months			
1	5	5	0
1-3	14	13	0
4-6	6	6	0
7-9	4	4	0
10-12	2	2	0
Years			
1-5	6	6	0
6-10	3	3	0
10	1	1	0

TABLE 3.—*Influence of Radiation-Induced Achlorhydria on Recurrence Rate of Gastric Ulcer (Nine Patients)*

	Before Achlorhydria		After Beginning of Achlorhydria	
Cases	Duration of Symptoms, Yr.	Recurrence Rate	Duration, Yr.	Recurrence
1	5	Annually	2	0
2	8	Every 6 mo.	1½	0
3	4	Every 2 yr.	5	0
4	4	Every 6 mo.	8	0
5	50	Annually	8	0
6	8	Every 6 mo.	6	0
7	10	Annually	6	0
8	4	Annually	6	0
9	9	Every 6 mo.	13	0

RATE OF HEALING AND INCIDENCE OF COMPLICATIONS

In 104 patients roentgen studies were sufficiently adequate to judge the rate of healing. Only a small percentage of the lesions healed in less than two or three weeks (table 5); in fact, two or three months was required in the majority of cases. In approximately 20% of the series 120 days or more was necessary for complete healing.

TABLE 4.—*Relationship of Postradiation Acidity to Recurrence of Gastric Ulcer (Ninety-Five Patients)*

Effect on Gastric Secretion	Total No. of Patients	Failure of Ulcer to Heal	Recurrence	No Recurrence to Date
Reduction in acidity by less than 50%	20	2	14	4
Reduction by more than 50% for less than one year	41	2	25	14
Reduction by 50% or more for one year or more	34	0	5	29

While the recurrence rates are similar in patients requiring four months or less for healing (table 5), recurrences were more frequent in patients in whom the healing time was longer than 120 days.

Fifty (43.1%) of the 116 patients had as complications hemorrhage, previous acute perforation, or obstruction (table 6); 6 experienced more than one complication; the most frequent was hemorrhage (42 patients). The result of medical management including gastric irradiation in this particular group is of great interest. The ulcer failed to heal in 6; 18 (40.9%) of the remaining 44 patients have had recurrences, a rate of recurrence comparable to that of the group as a whole. The incidence of recurrent complication was reduced; only 4 of the 42 who had had hemorrhage experienced recurrent bleeding in spite of the fact that 16 of them had recurrent ulcer. Six patients gave previous histories of perforation; none of these has experienced a subsequent perforation, and only one has had a recurrence of symptoms. Seven patients had temporary pyloric obstruction; two of these had recurrent ulcer with obstruction, and in

TABLE 5.—*Relationship of Rate of Healing of Gastric Ulcer to Recurrence (104 Patients)*

Rate of Healing, Days	No. of Patients	Patients with Recurrences	
		No.	%
Less than 45	38	14	36.8
45-90	33	13	39.3
90-120	13	5	38.5
120 or more	20	11	55.0

TABLE 6.—*Relationship of Complications to Recurrence of Benign Gastric Ulcer (116 Patients)*

Complications	No. of Patients with Complications	No. of Recurrences		No. of Ulcers Not Healing
		Uncomplicated	Complicated	
One hemorrhage	27	9	2	4
Recurrent hemorrhage	11	6	2	1
Hemorrhage and obstruction	1	0	0	1
Hemorrhage and perforation	3	1	0	0
Obstruction	5	2	2	0
Obstruction and perforation	2	0	0	0
Perforation	1	0	0	0

five the ulcer healed and has remained healed to date; four have been observed for five years or more. Thus, of the 50 patients who gave histories of complications and were treated medically, the incidence of recurrent complication was only 13.6%.

USE OF X-RAY THERAPY

Roentgen irradiation of the fundus and body of the stomach to inhibit, partially or completely, the secretion of acid gastric juice is not advocated as a "cure" for ulcer; rather, it is a valuable adjunct in therapy, to be utilized in conjunction with diet, antacids, antisecretory drugs, and sedatives. An immediate reduction in acidity of 50% or more was obtained in approximately 80% of the patients. In 36% the reduction lasted one year or longer; in the remaining patients the gastric secretory rate returned to the preradiation level within 3 to 12 months. In 9% of the patients an apparently permanent achlorhydria developed. The decrease in secretion usually occurred within four to six weeks after completion of the radiation. Before irradiation all patients had had one or more recurrences on the usual diet and antacid program; in many instances the symptoms had recurred every one or two years for periods of 5 to 40 years. The rate of recurrence thus could be established for each case, and each patient served as his own control. After irradiation therapy, the recurrence rate was reduced for the entire group. The ulcer failed to heal in 6.7%; 30% had recurring ulcer; 53.3% have had no further recurrence to date. In the group of patients observed from 5 to 17 years after therapy, 52.5% have had no recurrences in spite of the fact that all of them have discontinued the regular use of antacids.

TABLE 7.—*Recurrence Rate of Benign Gastric Ulcer in Relationship to Length of History (116 Patients)*

Length of History, Yr.	No. of Patients	% with No Recurrences	% with Recurrence	% Never Healed
Less than 1	26	65.3	30.9	3.8
1	6	75.0	8.4	16.6
2	12	50.0	50.0	0
3-5	22	54.7	40.8	4.5
6-10	20	50.0	35.0	15.0
11-20	18	38.8	39.0	22.2
More than 20	12	50.0	50.0	0

TABLE 8.—*Recurrences of Benign Gastric Ulcer (116 Patients) in Relationship to Age at Onset*

Age at Onset, Yr.	No. of Patients	% with Recurrences	% Never Healed
Under 20	1	100	0
20-29	12	50	0
30-39	33	44.1	5.9
40-49	31	40.6	6.2
50-59	27	40.0	20
60-69	10	10	0
70-80	2	0	0

The question arises as to the factors most accurately reflecting or predicting the tendency to recurrences. In this series, the size of the ulcer and the site of the lesion bore no significant relationship to future recurrences. Of the 23 female patients, 4 (17.4%) had recurrent ulcer; on the other hand, 41 (44%) of the male patients experienced recurrences, suggesting that males are more resistant to the treatment than females. The relationship between duration of symptoms and recurrence is shown in table 7; on the whole, patients with shorter histories had a somewhat lower recurrence rate. The relationship of recurrences to age at the onset of symptoms is shown in table 8. The prognosis appears unchanged from decade to decade up to the age of 60 years; subsequently the outlook seems more favorable. Likewise, patients receiving x-ray therapy after the age of 50 usually did better than those receiving it before they were 50 (table 9). Table 10 shows the maximum free acidity induced by histamine prior to x-ray therapy. The data indicate that the degree of acidity may give a prognostic clue, as only 5 (23.8%) of the 21 patients with a free acidity of less than 60 clinical units later experienced poor results. In contrast to this, 42.8% of the recurrences were in patients whose preradiation response to histamine disclosed a free acidity in excess of 60 clinical units. However, as pointed out above, the postradiation level of free acid is the really important measure.

TABLE 9.—*Relationship of Recurrences of Benign Gastric Ulcer to Age at Which X-Ray Therapy Was Administered (116 Patients)*

Age at Beginning of Therapy, Yr.	Total No. of Patients	% with Recurrences	Patients Followed More Than 5 Yr.		Failure to Heal *	Surgery Needed *
			No.	% with Recurrences		
20-29	3	33.3	2	0	0	1†
30-39	11	54.5	9	66.3	0	4
40-49	35	42.9	28	53.5	1	11
50-59	35	42.9	25	44.0	4	9
60-69	24	29.1	15	33.3	3	5
70-87	8	25	4	50.0	0	1

* Of total number of patients.
† For lymphosarcoma of stomach.

TABLE 10.—*Relationship of Preradiation Acidity After Histamine Stimulation to Postradiation Recurrence of Benign Gastric Ulcer (116 Patients)*

Free Hydrochloric Acid (Clinical Units)	Total No. of Patients	Recurrences	Failure to Heal
1-19	3	0	0
20-29	3	0	0
30-39	2	1	0
40-49	7	2	1
50-59	6	2	0
60-69	16	7	1
70-79	15	8	2
80-89	10	4	1
90-99	13	2	0
100-109	11	5	2
110-119	12	7	0
120 +	14	6	1
Total	112*	44	8

* Four patients had no gastric analysis (two recurrences).

FAILURES IN THERAPY

In eight patients the ulcer failed to heal adequately despite the strictest type of medical management and roentgen irradiation of the stomach. Seven subsequently underwent subtotal gastric resection; pathological examination confirmed the diagnosis of benign ulcer in all. The eighth patient died 10 months later from a coronary occlusion; no autopsy was obtained. In none of the eight was achlorhydria produced by radiation therapy.

In 46 of the 116 patients recurrent ulcer developed; in 23, the interval between healing and recurrence was less than 12 months. In all of these the recurrence rates were similar to the pattern prior to irradiation therapy; thus, this group obtained no immediate benefit from the therapy. In the remaining 23 patients the interval between healing and recurrence was definitely prolonged, in some for as much as four to six years. One patient is of great interest in that he had no trouble for 12 years after therapy. At this time he experienced a severe emotional upset, followed by perforation of a gastric ulcer and death. To our knowledge, this is the only death due to ulcer in the series. Of the 46 patients who had recurrent ulcer, 12 underwent operation, 21 were again treated with antacids, and 12 received a second course of x-ray therapy. The 21 patients who received medical therapy alone experienced relatively mild recurrences; 8 of these have had no further difficulty to date; 7 subsequently required surgery. Antacid therapy was resumed in the remaining six, four of whom have had no trouble to date. Twelve of the 46 patients who had recurrent ulcer after their first course of irradiation therapy received a second course. Of these, 10 had further trouble; 6 were then subjected to surgery, and 4 were continued on a medical program; one of the 4 has had no recurrences for at least five years.

These results may be used to justify either medical or surgical therapy; they do indicate that while a recurrence of symptoms and of the lesion is common, perseverance with a medical regimen may result in minimal symptoms and may be followed in time by complete and permanent healing. As indicated previously, the incidence of complications with recurring ulcer is markedly reduced after roentgen therapy. Furthermore, the recurrence rate of ulcer itself in patients with previous complications is not significantly different from that in the group as a whole. There have been no complications attributable to irradiation in any of the 116 patients with benign gastric ulcer in this study, some of them observed for as long as 17 years. There has been no evidence of malignant degeneration of the skin, or of injury of adjacent organs such as the heart, lung, liver, spleen, or pancreas. Although atrophy of the gastric mucosa developed in a number of patients at least temporarily, macrocytic anemia has not been observed, despite search for such evidence. Similarly, no permanent digestive disturbances have developed. Aside from the transitory and usually moderate nausea and dislike for milk and antacid, the side-effects are negligible.

TABLE 11.—*Incidence of Carcinoma After Radiation Therapy for Benign Gastric Ulcer (116 Patients)*

Type of Carcinoma	No. of Patients	Interval Between Therapy and Diagnosis, Yr.
Gastric *	2	15 and 1½
Pancreas	3	1, 7, 13
Colon	1	2
Right lung	2	7 and 13
Undifferentiated	1	4
Prostate	1	8

* One lymphosarcoma (1½ yr.).

INCIDENCE OF CANCER

The incidence of neoplasm in this series seems no greater than would be expected on the basis of the anticipated frequency in the general population (table 11). One patient subjected to partial gastrectomy for massive hemorrhage 14 years after gastric radiation therapy was found to have a primary carcinoma arising at a site in the stomach different from the healed lesion in the antrum; the patient is alive and well three years after the operation. Another patient, 18 months after therapy, was found to have a primary lymphosarcoma of the stomach; at operation the scar of the original ulcer was found to be well healed; the patient is alive and well eight months later. Thus, the incidence of neoplasm developing in the stomachs of patients with healed ulcers as observed in this study is 1.7%, a figure almost identical with that obtained by Smith and Jordan.[2] This low percentage suggests that neither the ulcer nor the radiation therapy had anything to do with the subsequent development of cancer. Of the eight other cancers detected in this group (table 11), seven were fatal; no significant relationship seems apparent, with the possible exception of the three pancreatic neoplasms. We have encountered a number of pancreatic cancers in patients with duodenal ulcer not treated with radiation therapy, and so we are not impressed with the present findings; however, further study is necessary before the question can be answered conclusively. Of the 116 patients, 25 are known to have died, 7 from carcinoma, as described in table 12, one from recurrent ulcer with acute perforation 13 years later, and 17 from various causes. Thus, the mortality rate from ulcer in this series is 0.8%.

TABLE 12.—*Causes of Death After Gastric Ulcer (116 Patients)*

Cause	No. of Patients	Yr. After Therapy
Cardiovascular disease	12	1-14
Carcinoma		
Pancreas	3	1-13
Right lung	2	7 and 13
Undifferentiated	1	4
Prostate	1	9
Perforated ulcer	1	13
Tuberculosis	1	6
Diabetes with complications	1	10
Suicide	2	6 and 8
Homicide	1	2

RESULTS OF SURGERY

Thirty patients (26.8%) required surgery because of failure to respond to medical therapy. In seven patients (6.2%) the ulcer had failed to improve on a strict medical program three to six weeks after irradiation therapy was instituted; the remaining patients had recurring ulcer. Since six different surgical procedures were performed in the 30 patients, a statistical analysis is not possible. Therefore, only a brief summary of the results will be given. Of 20 patients who had subtotal gastric resection, the results were excellent in 16; in the other 4, one had a jejunal ulcer seven months postoperatively, one had an obstruction of the gastroenterostomy stoma that necessitated further surgery, and 2 had severe, incapaci-

2. Smith, F. H.; Boles, R. S., Jr., and Jordan, S. M.: Problem of the Gastric Ulcer Reviewed: Study of One Thousand Cases, J. A. M. A. 153: 1505-1508 (Dec. 26) 1953.

tating nutritional difficulties. Four patients were treated by vagotomy alone; the operation was performed in the early days of vagotomy when this procedure was not yet known to be contraindicated for gastric ulcer. Two patients are well seven years postoperatively; the other two have experienced recurrences. Two patients had bilateral vagotomy and gastroenterostomy. One has had excellent results nine years postoperatively; the other has had a recurrence. Two patients had bilateral vagotomy and subtotal gastric resection with good results. Similarly, one patient had a simple closure for perforation and has had no further trouble. One patient had a simple excision of the ulcer; he required further surgery for gastric retention.

COMMENT

The present data demonstrate again that gastric ulcer, like duodenal ulcer, is related to the presence of hydrochloric acid in the gastric content, although in most patients with gastric ulcer acidity is lower than normal. Acid secretion was demonstrated in all patients after the injection of histamine. When achlorhydria developed after irradiation therapy, the ulcer healed and remained healed in spite of previous chronicity and complications. One patient with a history of recurrent ulcer almost annually for 50 years and with a repeatedly demonstrated ulcer for 12 years has been well, and the ulcer has remained healed, through 8 years to date of radiation-induced anacidity. A temporary achlorhydria developed, lasting from three to nine months, in 41 patients. In all of these except one, the ulcer healed and remained healed as long as the achlorhydria persisted. Achlorhydria was not always necessary for healing, as is shown by the fact that the ulcer healed in all 34 patients who obtained a reduction in acidity of 50% or more of the original level following irradiation. To date the lesion has not recurred in 29 of the 34 patients.

As with duodenal ulcer, the course of gastric ulcer is characterized by remissions and relapses. Histories of five years or more, with recurrences every one to two years, were obtained in approximately 50% of this series. This course can be interrupted most effectively by significantly lowering the acidity of the gastric content. The primary problem in gastric ulcer is the difficulty of clinical differentiation between benign and malignant gastric ulcer. As a consequence, some observers tend to the view that all ulcerating gastric lesions should be subjected to immediate and extensive resection. There are several points to bear in mind. In many series the average five year survival for ulcerating carcinoma of the stomach has been between 3 and 6%. The five year survival rate for patients successfully withstanding resection for carcinoma varies from 19 to 30%.[3] In addition, gastric resection entails a definite risk; the mortality rate in the hands of most surgeons, excepting the "master surgeons," approximates 4%. The problem of carcinomatous degeneration continues to be debated. Of the 78 patients in this series observed for from 5 to 17 years, carcinoma of the stomach developed in only one (1.2%); this lesion occurred at a site different from that of the original ulcer. In a second patient lymphosarcoma developed one and one-half years after treatment of a gastric ulcer proved benign by microscopic examination. This extremely low figure suggests a relationship of coincidence only. It would seem that if benign ulcers are precursors to cancer or if benign ulcers undergo malignant transformation the incidence in our series and in other groups of patients would be much higher.

Even though benign gastric ulcer simulates carcinoma in its symptomatology, the correct diagnosis can be made in the vast majority of cases if all diagnostic methods are used. Age, sex, relationship of pain to food taking, and change in type of distress, location, or severity in pain are of little value in the precise differential diagnosis. Atypical pain, loss of appetite, loss of weight, and a brief history are not uncommon with benign ulcer. The most helpful diagnostic approach is the repeated gastroscopic and roentgen examination of the patient during a strict antacid program in the hospital. The edict for surgery in two or three weeks if the ulcer does not heal is untenable. In this series of benign ulcers only a small percentage of the lesions healed in less than four weeks; in the majority of cases two or three months was required. Thus, continued medical management in uncomplicated ulcer seems justifiable under the circumstances described earlier in the paper. In the group of 121 patients so selected, the diagnosis subsequently was proved incorrect in 5, an error of 4.1%.

The present series is unique in that all patients received irradiation therapy as an adjunct to therapy. The effect can be evaluated fairly accurately since all patients had experienced one or more recurrences previously. Adequate follow-up studies were obtained in 115 of the 116 patients; 78 have been observed for five years or more. Of this group of 78, 37 patients (47.4%) have had recurrent ulcer. In the entire series of 116 patients, 46 (39.6%) have experienced recurrences. Of the 46 patients who had recurrences 12 were treated immediately with surgery. The remaining 34 patients were treated by a resumption of the antacid program with or without a second course of x-ray therapy. Some of these experienced a second recurrence of symptoms, but medical therapy was continued; in 18 of these further recurrences have not developed, although 9 have been followed for five years or more. In summary, then, of the 78 patients whose course has been followed for five years or longer, 64.1% have had no recurrence to date.

A much-debated question is whether patients with complications should have further medical treatment or be subjected to immediate surgery. We are of the opinion that no fixed rule is necessary and that each case should be judged individually. In the present series 50 patients (43.1%) of the 116 patients had one or more of these complications: controllable hemorrhage, previous perforation, or obstruction; the most frequent complication was hemorrhage. The data indicate that the presence of these complications should not definitely exclude the use

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of careful medical management, as the recurrence rate in this group is similar to that of the group as a whole. As with duodenal ulcer, surgery is indicated for benign gastric ulcer because of the complications of acute perforation, pyloric obstruction, or uncontrollable hemorrhage. Recurrence of the ulcer does not necessarily constitute an indication for surgery. In the present series, however, 26.7% of the patients were subjected to surgery. A conclusive appraisal of the results would be unfair since a number of patients had operations now known not to be procedures of choice. However, 4 of the 20 patients subjected to subtotal gastric resection were considered not to have benefited from the operation.

SUMMARY

An analysis was made of the diagnostic error, the course, and the results of therapy in 121 patients with a definite diagnosis of benign gastric ulcer observed during the period 1937 to 1954. The methods of study included the history and physical examination, gastric analysis, examination of the feces for occult blood, repeated roentgen and gastroscopic observation, and in some cases exfoliative cytology. The diagnosis of benign ulcer proved incorrect in five patients, an error of 4.1%. Of the 116 patients with benign gastric ulcer, 93 were males and 23 females. Only one patient was less than 20 years of age; the oldest was 70. Hydrochloric acid was present in the stomach of every patient. Roentgen irradiation to the fundus and body of the stomach was administered for the purpose of decreasing partially or completely the acid gastric juice; the total depth varied from 1,100 to 2,930 r. The irradiation was used as an adjunct to conventional therapy with diet, antacids, antisecretory drugs, and sedation. In 41 patients achlorhydria developed for three weeks to 13 years. In 40 patients the ulcer healed completely during anacidity. In the one instance of incomplete healing the achlorhydria was very brief in duration and the ulcer later healed despite the reappearance of acid. Gastric ulcers never recurred during the period of anacidity. Recurrences also were infrequent in patients experiencing a reduction in gastric acidity of at least 50% of control values, for at least one year; ulcers reappeared in only 5 of 34 patients in this category observed for 2 to 17 years.

The complications of hemorrhage, previous acute perforation, or obstruction had occurred in 50 of the 116 patients (43%). After medical treatment, including gastric irradiation, the incidence of complication decreased to 13.6%. The rate of recurrence of gastric ulcer diminished significantly for the entire group. In the group of 78 patients observed from 5 to 17 years after therapy, 52.5% have not experienced recurrences despite the fact that all have discontinued the regular use of antacids. In 46 of the 116 patients recurrences occurred; in 23 the pattern of recurrence was the same as before therapy; in 23 the interval between healing and recurrence was definitely prolonged in comparison with the previous pattern. Repeated medical management salvaged a significant number of patients in this group, at times culminating in permanent healing.

There were no complications attributable to irradiation during the period of observation, extending for as long as 17 years. No permanent digestive disturbances developed. The side-effects during gastric irradiation were negligible. The incidence of gastric neoplasm in this series, 2 of 116 patients (1.7%) is no higher than would be expected on the basis of anticipated frequency in the general population. Of the eight other cancers detected in this group, none appeared to have any direct relationship to the therapy. Thirty patients (27%) required surgery because of failure to respond to medical management. The results were excellent or good in 16 of the 20 patients undergoing subtotal gastric resection, in 5 of the 8 patients treated by vagotomy alone or combined with gastroenterostomy or gastric resection, and in one patient treated by closure of a perforated gastric ulcer. The one patient whose ulcer was excised locally later required gastric resection.

CONCLUSIONS

The correct diagnosis of benign gastric ulcer is possible in approximately 95% of cases when all diagnostic methods are used. The incidence of gastric neoplasm in patients with chronic, recurrent benign gastric ulcer does not exceed the frequency of gastric neoplasm in the general population. As with duodenal ulcer, the onset, chronicity, and recurrences of gastric ulcer are related directly to the presence of hydrochloric acid in the gastric content. Careful and repeated medical management facilitates the healing of benign gastric ulcer in the majority of patients, despite recurrences and the prior presence of complications. Moderate roentgen irradiation of the fundus and body of the stomach, for the purpose of decreasing completely or partially the secretion of hydrochloric acid, is a safe and valuable adjunct to the conventional medical treatment of benign gastric ulcer. The results of gastric irradiation are correlated directly with the degree of reduction in acid output and with the duration of the inhibitory effect. The complete healing of benign gastric ulcer usually requires two or three months of sustained medical management. The complete and sustained elimination of hydrochloric acid from the gastric content results in complete and permanent healing of benign gastric ulcer.

608 Keith Bldg. (Dr. Levin).

Chemotherapy of Leukemia and Hodgkin's Disease.—It is not intended to imply . . . that radiation therapy is now outmoded. [It] . . . is as valuable as any of the chemotherapeutic agents in the treatment of [Hodgkin's disease, chronic lymphocytic leukemia, lymphosarcoma, reticulum cell sarcoma, and chronic myelocytic leukemia, but not] acute leukemia. In some conditions radiation therapy may be more effective than any of the chemical compounds which have been discovered so far. Thus, it has yet to be shown that the remissions induced by Myleran are comparable in duration to those which follow skillful radiation therapy. Again, radiation locally applied when no systemic therapy seems to be required has no counterpart in chemotherapy. Against these advantages must be weighed the convenience and smaller cost of chemotherapy and the discomforts of radiation sickness as compared with those of the drugs which may be used. In the last analysis, the most effective management of the disorders under consideration is to be found in the judicious use of the whole therapeutic armamentarium that is available.—M. M. Wintrobe, G. E. Cartwright, P. Fessas, A. Haut, and S. J. Altman, Chemotherapy of Leukemia, Hodgkin's Disease and Related Disorders, *Annals of Internal Medicine*, September, 1954.

ACQUIRED AGAMMAGLOBULINEMIA

REPORT OF THREE CASES

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Bruton [1] described the first case of agammaglobulinemia in 1952. In the same year the occurrence of the disease in three children was reported.[2] Nine cases have been reported by Janeway and his associates.[3] Since these patients were all boys, the disease was believed to be sex linked and congenital. All had had recurrent infections since infancy. Pyoderma, purulent conjunctivitis, otitis media, purulent sinusitis, pneumonia, meningitis, and purulent arthritis were noted. These infections responded promptly to antibiotics but recurred soon after the therapy was discontinued. An 8-year-old boy had 18 attacks of pneumococcic sepsis; at various occasions eight different types of pneumococci were cultured from his blood.[1] This child, as well as other persons with agammaglobulinemia, was found to be unable to produce antibodies to pneumococci. The Schick test remained positive after a series of injections of diphtheria toxoid. Other patients proved to be unable to produce antibodies to typhoid-paratyphoid antigens, and complement fixation tests for mumps were negative three weeks after a typical attack. Siblings and other members of the patient's families failed to show abnormalities of serum proteins.[2]

Histological details from one autopsy and one connective tissue biopsy have been reported.[3] The autopsy revealed only a strikingly diminished gamma globulin content of the lymphoid tissue. The material of the connective tissue biopsy was found to have a low gamma globulin content. Patients with agammaglobulinemia were thought to have a normal response to virus infections [3]; however, Keidan and associates [4] reported a case of fatal generalized vaccinia after the vaccination of an 11-month-old girl. There was complete absence of serum gamma globulin by electrophoretic measurement, and no vaccinia antibodies could be demonstrated. Humoral defenses against viral diseases as well as against bacterial infections may be impaired. During the past six months we have had the opportunity to observe two men and one woman with agammaglobulinemia. There is no proof of a hereditary or congenital origin in any of these patients. In one the disease apparently was secondary to sarcoidosis.

MATERIALS AND METHODS

Serum protein determinations were performed by means of electrophoresis with the portable model of the American Instrument Company.[5] Immunologic studies were performed on three patients and on normal adult controls. All were immunized by subcutaneous injection of 0.08 mg. each of pneumococcic polysaccharides, types I and II, with 0.1 ml. of a 1:100 dilution of a polysaccharide fraction of Brucella abortus and two weekly doses of 0.5 ml. typhoid-paratyphoid vaccine. Precipitins for pneumococcic polysaccharides were tested by an adaptation of the method of Kolmer and Boerner.[5] Serum Brucella agglutinins were determined by the standard dilution method.[6] The agglutination of Salmonella typhosa O and H antigens and S. paratyphi and S. schottmülleri were determined by the rapid slide method.[7] Observations on the response of isohemagglutinins to challenges with 1 ml. of mismatched blood [8] were recorded in two of the three patients.

REPORT OF CASES

CASE 1.—A 29-year-old man first had pneumonia in 1942 while serving in the United States Navy. After recovery the patient had a chronic cough productive of two cupfuls of purulent sputum per day. In 1944 he received a medical discharge from the navy because he had bronchiectasis. The symptoms persisted, despite postural drainage and antibiotic therapy. In September, 1946, the lower lobe of the patient's left lung was removed. There was some subjective improvement, but he soon had two episodes of fever, chills, and productive cough. In 1948 he was hospitalized with chills, fever, and productive cough; a bronchogram showed bronchiectasis of the lower lobe of the right lung. Pneumonia in this same area led to another hospitalization in 1950. Bronchograms revealed moderate cylindrical bronchiectasis of the middle and lower lobes of the right lung as well as of the lingula. In August, 1950, the lingula was resected. Fever and fatigue recurred repeatedly. All these episodes subsided with antibiotic therapy. In February, 1953, pneumonia recurred in the lower lobe of the right lung, and the patient was hospitalized. The white blood cell count was 5,900 per cubic millimeter, with 60% polymorphonuclear leukocytes, 33% lymphocytes, 3% monocytes, and 4% eosinophils. The hemoglobin level was 13.8 gm. per 100 ml. The erythrocyte sedimentation rate was 17 mm. in one hour. Serum proteins included albumin, 4.9 gm. per 100 ml., and globulins, 0.7 gm. per 100 ml. (Kingsley method). Electrophoresis showed that the total serum proteins were 5.6 gm. per 100 ml.; albumin, 4 gm. per 100 ml. The globulin fractions were: $alpha_1$, 0.2 gm.; $alpha_2$, 0.7 gm.; and beta, 0.7 gm. per 100 ml. There was no gamma fraction.

From the Veterans Administration Hospital and the Department of Medicine of the University of Minnesota Medical School.

Dr. Donald W. Koza, Ancker Hospital, St. Paul, gave permission to report case 3.

Robert E. Manion and Joan Sellner gave technical assistance.

The pneumococcic polysaccharides, types I and II, used in this study were supplied by Dr. Lawrence Hobson, E. R. Squibb & Sons, Division of Mathieson Chemical Corporation, 745 Fifth Ave., New York, and the polysaccharide fractions of Brucella abortus and the typhoid-paratyphoid vaccine were supplied by Dr. James Rueggsegar, Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.

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The acute pneumonic infiltrate subsided after penicillin therapy, but an area of plate-like atelectasis remained in the middle lobe of the right lung. Typhoid-paratyphoid vaccine and the polysaccharides of Diplococcus pneumoniae, types I and II, failed to produce measurable antibodies, and polysaccharides of Br. abortus provoked a poor response. The patient's isoagglutinin titer failed to rise after intravenous injection of 1 ml. of mismatched blood (tables 1 to 4).

The patient received 7 gm. (40 ml.) of pooled human gamma globulin intramuscularly once monthly for six months. During that time he had two episodes of pneumonia in the middle lobe of the right lung, with chills, fever, and increased expectoration. Both episodes responded promptly to antibiotic therapy, but the atelectatic area in the middle lobe of the right lung was unchanged. After six months the gamma globulin therapy was discontinued, and, since March 1, 1954, the patient has been receiving two prophylactic doses daily of 250 mg. of tetracycline. The sputum production has become minimal, and there has not been any recurrence of pneumonia.

Electrophoretic studies of the serum proteins yielded the following values: total serum proteins, 6.6 gm. per 100 ml., with albumin, 4.4 gm. per 100 ml., and the globulins 2.2 gm. per 100 ml. (alpha$_1$, 0.4 gm.; alpha$_2$, 0.9 gm.; and beta, 0.9 gm. per 100 ml.). There was no gamma fraction. Challenges with the polysaccharides of D. pneumoniae, types I and II, and Br. abortus, as well as typhoid-paratyphoid vaccine, failed to produce antibody response (tables 1 to 4). After therapy with 1,200,000 units of penicillin daily for a period of four days the pneumonic lesion cleared. The patient then was given six monthly intramuscular injections of pooled human gamma globulin. By the end of the sixth month, he had no further recurrences of pneumonia and was given daily oral doses of penicillin. The fibrotic lesion in the upper lobe of the right lung remains unchanged.

TABLE 1.—*Precipitin Tests in Serums of Three Patients with Agammaglobulinemia and in Three Normal Adults Before and After Immunization with 0.08 Mg. of Pneumococcus Polysaccharides, Types I and II*

Case	Pneumococcus Polysaccharides, Type	Prior to Immunization — Polysaccharide Dilution					Three Weeks After Immunization — Polysaccharide Dilution				
		1:500	1:5,000	1:50,000	1:500,000	1:5,000,000	1:500	1:5,000	1:50,000	1:500,000	1:5,000,000
1	I	+†	0	0	0	0	+	0	0	0	0
	II	0	0	0	0	0	0	0	0	0	0
2	I	0	0	0	0	0	0	0	0	0	0
	II	0	0	0	0	0	0	0	0	0	0
3*	I	+	+	+	0	0	0	0	0	0	0
	II	0	0	0	0	0	0	0	0	0	0
Control											
1	I	0	0	0	0	0	+++	+++	++	++	++
	II	0	0	0	0	0	+++	+++	+++	++	++
2	I	0	0	0	0	0	++	++	+	±	+
	II	0	0	0	0	0	++	+	+	+	+
3	I	0	0	0	0	0	++	++	++	++	+
	II	0	0	0	0	0	++	++	++	++	++

* Preimmunization serum obtained three weeks after pneumococcic meningitis of unknown type.
† Recording scale of the precipitate: 0, ±, +, ++, +++.

TABLE 2.—*Agglutinins in Serums of Three Patients with Agammaglobulinemia and in Three Normal Adults Before and After Immunization with 0.1 Ml. of a 1:100 Dilution of Polysaccharide Fraction of Brucella Abortus*

Case	Prior to Immunization — Serum Dilution					Three Weeks After Immunization — Serum Dilution				
	1:20	1:40	1:80	1:160	1:320	1:20	1:40	1:80	1:160	1:320
1	0*	0	0	0	0	±	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
Control										
1	0	0	0	0	0	+	+	+	+	+
4	0	0	0	0	0	+	+	+	±	0
5	0	0	0	0	0	+	+	+	±	0

* Recording scale of agglutination: 0, ±, +.

CASE 2.—A 37-year-old man first had pneumonia in 1947. Since the winter 1952-1953 he had a continual recurrence of "chest colds" in rapid succession. All these episodes were associated with chills, night sweats, and cough productive of thick, yellowish sputum. Repeated bacteriological examinations of sputums and material from gastric aspirations failed to reveal tubercle bacilli. Skin tests with 0.005 mg. of purified protein derivative of tubercle bacilli were negative. Chest films showed fibrosis of the basilar portion of the upper lobe of the right lung with a pneumonic infiltrate. Bronchograms were normal. The hemoglobin level was 13.9 gm. per 100 ml., the white blood cell count varied from 10,000 to 15,000 per cubic millimeter, and the sedimentation rate rose from 42 mm. to 75 mm. in one hour.

CASE 3.—A 30-year-old woman had 35 attacks of pneumonia in the seven years from 1943 to 1950. Her spleen had been enlarged since 1947. The patient was first seen with pneumococcic meningitis at the Ancker Hospital, St. Paul, in 1950. Since then she has been treated in that institution nine times for pneumococcic pneumonia and twice for pneumococcic meningitis. Unfortunately the types of pneumococci isolated are not known. Of 21 determinations of the sedimentation rate during these acute infections only one reached a value of 37 mm. in one hour; all the other readings were 16 mm. or less in one hour. There was no abnormal bleeding. Plasma fibrinogen was not measured, but presumably was normal. Splenomegaly, a low leukocyte count, between 3,000 and 5,400 per cubic millimeter during the pneumonic episodes, with the hemoglobin level about 10 gm. per 100 ml., and several episodes of arthralgia led to the diagnosis of hypersplenism. Biopsies of an axillary lymph node and the liver revealed epithelioid cell granulomas without necrosis. On April 29, 1952, the spleen was removed

surgically. It weighed 1,130 gm., and on microscopic examination it showed numerous granulomas containing epithelioid cells, giant cells of the Langhans' type, and several very small areas of necrosis. Specific stains failed to reveal the presence of acid-fast organisms, fungi, or yeasts. There was a notable absence of plasma cells in the spleen and the lymph node. A histological diagnosis of probable Boeck's sarcoid was made.

In 1951 the patient's serum proteins were as follows: total, 5.8 gm. per 100 ml., with albumin, 4.6 gm. per 100 ml., and globulins, 1.2 gm. per 100 ml. (Kingsley). After splenectomy the patient proved capable of more adequate leukocytic response during pneumonic episodes; the white blood cell count reached 11,500 per cubic millimeter on Feb. 7, 1953, and 16,800 per cubic millimeter on May 4, 1953. Prophylactic penicillin therapy was begun in June, 1953, with an oral dose of 600,000 units daily. The patient was well and free of infection. On Nov. 1, 1953, this regimen was abandoned, and on Nov. 21 the patient was readmitted with pneumococcic meningitis. The white blood cell count was 68,487 per cubic millimeter. Her serum proteins (Kingsley) were, in total, 5.6 gm. per 100 ml., with albumin, 4.8 gm. per 100 ml., and globulins, 0.8 gm. per 100 ml. By electrophoresis the serum proteins were: albumin, 3.7 gm. per 100 ml.; and among the globulins, alpha$_1$, 0.6 gm.; alpha$_2$, 0.6 gm.; and beta, 0.7 gm. per 100 ml. There was no gamma fraction. After successful therapy with penicillin this patient was subjected to the same antigenic challenges as the two previous patients. Antibodies failed to develop to the polysaccharides of D. pneumoniae, types I and II, and Br. abortus, as well as to typhoid-paratyphoid vaccine. Her blood serum failed to agglutinate the cells of either group A or B, although her own red blood cells were of type O. Intravenous injections of 1 ml. of type AB blood failed to provoke any isohemagglutinins.

COMMENT

The majority of humoral immune bodies are contained in the gamma globulins. By the method of electrophoresis-convection the latter can be subdivided into several subfractions.[9] Each of these subfractions of gamma globulin has antibody activity, but their precipitability with different antigens varies. There are inhibiting fractions that may block precipitation of one fraction with an antigen while enhancing the precipitation with another fraction. Antibody titers are the net result of competing protein molecules of various reaction capacities.[10] Serum gamma globulin levels are normal in the newborn infant but drop by about one-third in the first month of life.[11] They remain at these low levels for about three months and then gradually begin to rise. Near-normal adult values are reached at the age of 2 years. The early period in the infant's life is a precarious and dangerous one as far as infectious diseases are concerned. Therapy with pooled human gamma globulin appears to give protection against infections in infants and children.[3] Injection

TABLE 3.—*Agglutinin Titers in Serums of Three Patients with Agammaglobulinemia and in Three Normal Adults Before and After Immunization with Two Weekly Doses of 0.5 Ml. of Typhoid-Paratyphoid Vaccine**

		Prior to Immunization					Three Weeks After Immunization				
		Serum Dilution					Serum Dilution				
Case	Salmonella Antigens	1:20	1:40	1:80	1:160	1:320	1:20	1:40	1:80	1:160	1:320
1	Typhosa H	0†	0	0	0	0	0	0	0	0	0
	Typhosa O	0	0	0	0	0	0	0	0	0	0
	Paratyphi	0	0	0	0	0	0	0	0	0	0
	Schottmülleri	0	0	0	0	0	0	0	0	0	0
2	Typhosa H	0	0	0	0	0	0	0	0	0	0
	Typhosa O	0	0	0	0	0	0	0	0	0	0
	Paratyphi	0	0	0	0	0	0	0	0	0	0
3	Typhosa H	0	0	0	0	0	0	0	0	0	0
	Typhosa O	0	0	0	0	0	0	0	0	0	0
	Paratyphi	0	0	0	0	0	0	0	0	0	0
	Schottmülleri	0	0	0	0	0	0	0	0	0	0
Control											
1	Typhosa H	+++	+	±	0	0	++++	++++	++	+	+
	Typhosa O	+	0	0	0	0	++++	+	±	0	0
	Paratyphi	++	+	0	0	0	++	+	±	0	0
	Schottmülleri	++	+	±	0	0	++++	++	±	0	0
6	Typhosa H	++++	++++	++	±	0	++++	++++	++	+	±
	Typhosa O	++++	++	+	0	0	++++	+++	+	0	0
	Paratyphi	++	+	±	0	0	++++	++	+	+	±
	Schottmülleri	++	+	0	0	0	++++	+++	++	+	±
7	Typhosa H	+++	+	±	0	0	+++	++	+	±	0
	Typhosa O	+	0	0	0	0	+++	+	±	0	0
	Paratyphi	+	±	0	0	0	++++	++	±	0	0
	Schottmülleri	±	0	0	0	0	++++	+++	+	0	0

* All subjects had received previous immunizations with the same antigens.
† Recording scale of agglutination: 0, ±, +, ++, +++, ++++.

TABLE 4.—*Isohemagglutinin Titers in Two Patients with Agammaglobulinemia and in Three Normal Adults After Intravenous Injection of 1 Ml. of Incompatible Blood*

Case	Patient's Blood Group	Blood Group of Injected Blood	Agglutinin Titer Prior to Injection	Agglutinin Titer One Week After Injection
1.	B	A	1:8	1:8
3.	O	AB	0	0
Control				
8.	O	B	1:16	1:128
9.	O	B	1:128	1:256
10.	O	B	1:32	1:64

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of 0.1 gm. of pooled gamma globulin per kilogram of body weight brings the serum gamma globulin level to about 100 mg. per 100 ml. The "half-life" of this passively infused gamma globulin is longer than in normal children. There is no evidence of accelerated destruction but rather of a deficiency in production. Whenever the serum gamma globulins, as well as other serum proteins, are low, as in starvation, the nephrotic syndrome, or idiopathic hypoproteinemia,[12] recurrent infections may be a serious clinical problem.

Agammaglobulinemia is quite different from these conditions. It is characterized by normal protein fractions with the sole exception of gamma globulin, which may be completely absent or present in such small amounts (up to 30 mg. per 100 ml.) that they can be demonstrated only by immunochemical methods. From the current evidence, it appears that there are two types of the disease, one idiopathic and probably congenital, the other acquired or secondary to a disease of the lymphatic or reticuloendothelial systems. Brem and Morton [13] reported two cases of chronic lymphatic leukemia with secondary agammaglobulinemia. Arends and associates [14] reported agammaglobulinemia in one patient with malignant lymphoma, and Snapper [15] encountered one patient with multiple myeloma. The patient with sarcoidosis (case 3) belongs in this category of secondary agammaglobulinemia. The spleen and lymph nodes of that patient were noteworthy for the absence of plasma cells, which are generally thought to be the source of the gamma globulins. The other two patients seem to have acquired their disease in adult life, but the cause is unknown. Replacement therapy with pooled gamma globulin proved disappointing in one adult man (case 1). His therapy was changed to prophylactic antibiotics, and the patient has not had any recurrence of pneumonia. Experience with the patient in case 3 indicates that prophylactic antibiotic therapy must be continuous. Antibiotic-resistant bacteria, particularly micrococci, might become a problem.

SUMMARY

Agammaglobulinemia was observed in two men and one woman who had a normal childhood but who had recurrent respiratory infections, pneumonia, bronchiectasis, and pneumococcic meningitis during early adulthood. In two of these patients the cause of the disease was unknown. In the third it appeared to be secondary to generalized sarcoidosis. The patients were unable to produce humoral bacterial antibodies. Biopsies of the liver, spleen, and lymph nodes of one patient showed complete absence of plasma cells, which are generally thought to be the source of gamma globulin. Intramuscular therapy with pooled human gamma globulin failed to protect one of the patients from recurrences of pneumonia. Antibiotic therapy was followed by prompt clinical response. Continuous treatment with antibiotics seemed to be the most effective means to prevent infections. Although the majority of patients with agammaglobulinemia have been men, the disease is not considered sex linked.

54th St. and 48th Ave., S. (17) (Dr. Hall).

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PHARMACOLOGICAL EFFECT OF VARIOUS DRUGS ON MICTURITION

CHAIRMAN'S ADDRESS

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DRUGS AFFECTING THE AFFERENT NERVES

Drugs that affect the afferent or sensory nerves are not very important to the urologist. Alkalies, oils, and local anesthetics are used to relieve cystalgia by rendering the urine less irritative or by coating over the mucosa of the bladder. Alkaline urine is usually less irritating than acid urine. Occasionally patients who are taking dilute hydrochloric acid for achlorhydria will complain of dysuria, but hypersensitivity is not a major complication of systemic medication. Drugs to stimulate the atonic bladder by irritation of the vesical and urethral mucosa have been sought for years. Glycerin in various dilutions has been advocated in postoperative retention of urine, but its use has always caused much pain, and I have never seen any beneficial results. Many years ago, a nurse told me that at her hospital, methenamine (Urotropin), 5 gm. every four hours, was used and was believed to be very helpful. I have found it as effective as any other medicament, although its method of action is not exactly understood. The only explanation I would offer is that the end-product of methenamine is formaldehyde, which might irritate the bladder mucosa. Patients recover from postoperative retention of urine without medication, and one never knows if any medicament has helped. I believe I should mention the intrathecal injection of 0.5 to 1 cc. of absolute alcohol for the intolerable pain of bladder and prostatic cancer, now usually relieved by chordotomy or lobotomy. I still recall several grateful patients on whom I used the injection of alcohol. It is not a formidable procedure, and, if care is taken in keeping the patient in the proper position for one or two hours after the injection, one need not fear motor paralysis.

Read before the Section on Urology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 23, 1954.

DRUGS AFFECTING THE MOTOR NERVES

The importance of drugs affecting the efferent or motor nerves has been a controversial matter for many years, partly because of conflicting theories on the anatomy and nerve supply of the bladder. I discussed my conception of the anatomy and nerve supply of the bladder in the paper read before this section in 1953. In 1939, I wrote: "In order to understand the rationale of the drugs used most recently in some bladder conditions, we must remember that the pharmacology of that type of drug has undergone some remarkable changes. We used to speak of myoneural junctions and were told that certain drugs paralyzed them, others stimulated. Today when we consider the use of acetyl-beta-methycholine chloride, a cholinergic (parasympathetic) drug, the older order has given way to the new, the humoral transmission of nerve impulses."[1] Loewi, in 1921 and 1922, found that when he stimulated the vagus nerve of a frog's heart he was perfusing, then with some of the perfusate perfused a second frog's heart, the perfusate stimulated the vagus of the second frog [2]; thus was humoral transmission born. It has been demonstrated in every cholinergic function in the body and includes transmission at preganglionic fibers of both sympathetic and parasympathetic ganglions. The real transmitter of these impulses is acetylcholine, which is released when the vagus nerve of the heart or the sacral nerves of the bladder are stimulated. The action of this transmitter is very transient and lasts only long enough, as a rule, to give physiological function. The reason for its proper action is that it is quickly deactivated by choline esterase, an enzyme that seems specific. Acetylcholine is hydrolyzed, giving inert choline, and its concentration can be determined in a given sample of blood or tissue. The action of acetylcholine may be lengthened by the previous administration of physostigmine or one of its synthetic analogues, neostigmine (Prostigmin). These substances inhibit the destroying action of acetylcholine esterase. Atropine likewise, instead of affecting the myoneural junctions, simply prevents acetylcholine from acting. It does not prevent its formation, since the amount produced when atropine is given has been found to be actually double the normal quantity; furthermore, denervated structures are usually more responsive to acetylcholine effects, normal or artificial.

In a previous paper [2a] I stated that the principal efferent nerves to the bladder were the sacral or parasympathetic nerves and that the hypogastric or sympathetic nerves innervate the trigone muscle of the bladder only. Parasympathomimetic drugs, acetylcholine and its derivatives, produced increased bladder irritability and a decrease in bladder capacity. In the same paper I wrote: "The place of adrenergic drugs in bladder conditions has been questionable. Older investigators of sympathetic effects felt that they caused relaxation of the fundus, allowing greater filling and decreasing intravesical pressure; further, the sphincters controlled by the trigone were thought to be first contracted and then relaxed. According to Balyeat and Rinkel,[3] full doses of ephedrine produced vesical retention. Both ephedrine and epinephrine are considered sympathomimetic, but only the latter really mimics true adrenergic action. Further, epinephrine is potentiated by cocaine and reversed by ergotoxine as regards its augmentatory effects; the action of ephedrine is not changed."

Adrenergic Drugs.—According to their clinical use, the various drugs affecting the bladder may be divided into those chiefly mimicking the sympathetic action (adrenergic) and those chiefly mimicking the parasympathetic action (cholinergic). The adrenergic drugs most helpful for urinary difficulties are ephedrine and epinephrine. Ephedrine sulfate has been found very useful in treating children for enuresis and women for stress incontinence. I have always believed that its beneficial effect in enuresis is partly due to the fact that it causes children to sleep less soundly. Its beneficial effect in stress incontinence might be explained by the lessened desire to void. Slaughter [4] found that after taking ephedrine sulfate by mouth patients did not lose the sense of fulness but had no desire to void. If treatment with ephedrine was continued for too long, voiding became difficult; the same was true to a lesser extent when amphetamine (Benzedrine) was administered. Epinephrine has proved helpful for difficult urination. In 1931 I reported [5] that one patient who had difficulty in voiding after presacral neurectomy found she could void more easily after applying epinephrine to the nasal mucous membranes. This patient apparently was able to stimulate the few remaining sympathetic nerve fibers and produce contraction of the trigone muscle sufficient to depress the posterior lip of the internal vesical orifice and start the act of urination. Without this action the detrusor muscle must increase the intravesical pressure sufficiently to open the internal vesical orifice. The drugs that have an adrenolytic action are not useful because the sympathetic nerves that they affect have only a minor role in micturition. Ergotoxine and ergotamine tartrate are drugs with adrenolytic action, mentioned only for academic interest.

Cholinergic Drugs.—The cholinergic drugs are the most potent of drugs affecting the act of micturition. Acetylcholine that is formed in the body has only a fleeting action because it is quickly inactivated by choline esterase. Methacholine (Mecholyl) chloride and carbachol (Doryl) have longer action; the most useful drug is bethanechol (Urecholine) chloride, so helpful in treating partial paralysis of the bladder in anterior poliomyelitis infections. Neostigmine (Prostigmin) methylsulfate, vasopressin (Pitressin), and their analogues potentiate the action of acetylcholine by inactivating the esterase, thus allowing the choline derivative longer action.

Antihistaminic Drugs.—The antihistaminic drugs that have produced urinary symptoms in my patients are chlorprophenpyridamine (Chlor-Trimeton) maleate, methapyrilene (Histadyl) hydrochloride, diphenhydramine (Benadryl) hydrochloride, thonzylamine (Anahist)

1. Van Duzen, R. E., and Slaughter, D.: Correlation of Clinical Experience and Present Day Knowledge of Autonomic Nerve Supply of Bladder, South. M. J. **32**: 795-798 (Aug.) 1939.
2. Loewi, O.: Humoral Transmission of Effects of Heart Nerves, Klin. Wchnschr. **2**: 1840-1841 (Oct. 1) 1923.
2a. Van Duzen, R. E., and Slaughter, D.: Correlation of Clinical Experience and Present Day Knowledge of Autonomic Nerve Supply of Bladder, South. M. J. **32**: 795-798 (Aug.) 1939.
3. Balyeat, R. M., and Rinkel, H. J.: Urinary Retention Due to Use of Ephedrine, J. A. M. A. **98**: 1545-1546 (April 30) 1932.
4. Slaughter, D.: Personal communication to the author.
5. Van Duzen, R. E.: Effect of Resection of Presacral Nerve on Vesical Function, South. M. J. **25**: 964-967 (Sept.) 1932.

hydrochloride, and chlorcyclizine (Perazil). In one patient, as reported below, chlorprophenpyridamine prescribed for nasal congestion contributed to dysuria and frequency.

A woman first seen by me on Oct. 20, 1952, had had a history of attacks of dysuria and frequency for the preceding 10 years; her illness had responded to various antibiotics. In May, 1952, she was seen in a clinic, where a very complete history was taken and a complete examination was made, including cystoscopy and pyelogram. I received a copy of the clinic's findings, which were stricture of the urethra and trigonitis. When I saw the patient the urethra was tight to an F. 20 sound; however, she responded very promptly to urethral dilatation and did quite well until February, 1953, when she reported she again had severe dysuria and frequency; she noted some blood in the urine at that time. Cystoscopy at that time showed several areas of submucous hemorrhages on the posterior wall and floor of the bladder. No ulcers or polyps were noted in bladder or urethra. The urethra was of normal size; no blood was seen to come from either ureteral orifice. There were many pus cells and a few blood cells in the catheterized bladder urine; however, the patient was not relieved of dysuria when the urine showed only 0-1 white blood cells one month later. I then questioned her about a food or medicament that might contribute to this condition. I found she was known to be allergic to several foods and pollens. She then volunteered that she was taking chlorprophenpyridamine for nasal congestion and that shortly before the onset of this attack she had tripled the usual dosage to clear up a severe cold; shortly afterward the dysuria began. She was still using the chlorprophenpyridamine; after consultation with the otolaryngologist, I instructed her to discontinue its use. The urinary symptoms ceased promptly without any local treatment, and the patient has remained well to date.

In another patient ephedrine and methapyrilene taken to relieve head cold contributed to urgency and difficulty in voiding.

In 1934 a 54-year-old man was seen because of slowness of urinary stream for the past year. He had been advised to have prostatic resection; the prostate showed 2+ enlargement. The rectum showed internal and external hemorrhoids. Cystoscopic examination showed a collarette about the prostatic urethra but no residual urine. Treatment of the hemorrhoids and a few prostatic massage treatments completely relieved the patient. When he was seen one year later he had been troubled with dysuria and urgency. He reported that, six months earlier, he had used 0.5 oz. (14 gm.) of ephedrine inhalant to relieve a head cold. The next day he was unable to void and was hospitalized. An urethral catheter was used for 48 hours before the patient was relieved.

His symptoms had become much worse on the day before he reported to my office. He stated he had used a "salve" in his nose for a head cold and shortly afterward experienced difficulty in voiding. He had 3 oz. (89 ml.) of residual urine, and the prostate was enlarged and very tender. After use of sitz baths and belladonna and opium suppositories for one week, his urgency and difficulty in voiding ceased. I saw him only occasionally, but his family reports he did not find it necessary to have prostatic resection until 12 years later. Examination of the salve showed it to be a petrolatum base containing diphenhydramine (Benadryl).

Drugs That Affect the Bladder Only Secondarily.—There is a group of drugs whose chief action is not related to the bladder, but that have side-effects that influence micturition. Methantheline (Banthine) bromide, used extensively in the treatment of duodenal ulcer, may make urination difficult for several hours. When given intravenously, it frequently causes complete retention. This drug acts on the ganglions and preganglionic nerve fibers, blocking cholinergic transmission. Naphazoline (Privine) hydrochloride, used as a vasoconstrictor of the nasal mucous membrane, has caused complete retention on one occasion and difficult urination each time it was used in one patient. Hydralazine (Apresoline) hydrochloride, which has been used in the treatment of hypertension, has caused complete retention, requiring prolonged use of the retention catheter. Morphine acts chiefly on the cerebral cortex; however, Slaughter [6] has showed that morphine causes a strong stimulation of the detrusor muscle of the bladder. Since the muscle of the vesical orifice is stronger than the muscle of the fundus of the bladder, retention may result. Slaughter showed that this action was truly parasympathomimetic. Posterior pituitary injection (Pituitrin) acts directly on muscle protoplasm. It has been tried in postoperative retention of urine but is now seldom used. Calcium deactivates bladder muscle contractions by direct action on protoplasm and is useful in a few cases of hypertonia of the bladder. Estrogens have been advocated for frequent and urgent urination in women; it is believed that any benefit is due to the effect on the erectile tissue about the urethra, making urination more difficult. Androgens are used in small boys with enuresis; the beneficial effect is probably due to stimulation of the growth of the prostate.

COMMENT

With the exception of the choline derivatives, drugs do not materially affect the bladder of the normal person. It has been claimed that adrenergic drugs are antagonistic to cholinergic drugs. Ephedrine sulfate may aid in stress incontinence, but it is not the adrenergic action but the action on the cerebral centers that is beneficial. It is true that diphenhydramine, chlorprophenpyridamine, and methapyrilene have epinephrine-like action, but it is doubtful if the adrenergic action plays any part in the urinary difficulty that may result from their use; they are antihistaminic drugs. Naphazoline is a vasoconstrictor (sympathomimetic), and hydralazine is a vasodilator (sympathicolytic); both produce urinary retention at times, entirely as a side-effect. Methantheline exerts its chief action at the autonomic ganglions rather than at the peripheral nerve endings, blocking cholinergic transmission without preventing activation of the adrenergic end organs.

The normal man notices little difficulty in voiding after taking diphenhydramine, naphazoline, hydralazine, or chlorprophenpyridamine. It is the man who has a slight to moderate enlargement of the prostate and is dulled by sleep or rendered tense by fear or cold who may have partial or even complete retention of urine after the use of these drugs. A man relaxed by a small amount of alcohol may void with ease, but a man stupefied by large amounts of alcohol, especially beer, often has complete retention, especially if a prostatic obstruction or urethral stricture is present. Morphine may not cause urinary retention in the normal person, but when it is combined with a partial interference of the passage of impulses through the association centers of the brain, as in the postanesthetic state, the same dose often causes urinary retention. According to Slaughter,[6] this probably accounts for postoperative urinary retention.

6. Van Duzen, R. E.; Slaughter, D., and Winter, I. C.: Effect of Trasentin and Morphine on Urinary Bladder of Unanesthetized Dog, J. Urol. 44: 667-676 (Nov.) 1940.

If it is necessary to give an antihistaminic drug to a patient who has previously had difficulty in voiding after its use, the drug should, if possible, be taken several hours before retiring. When it is necessary to prescribe a drug to be taken during the normal sleeping hours, urinary difficulty for the patient may sometimes be avoided if a smaller than normal dose of the drug is prescribed. I have seen patients with stress incontinence of urine who were benefited by the administration of ephedrine sulfate and in whom the beneficial effect of the ephedrine was subsequently completely neutralized by barbiturates. Several patients have found that the urinary difficulty experienced after the taking of antihistamines is minimized by using small doses of phenobarbital at the same time. One patient, who had had a thyroidectomy for thyrotoxicosis, had urinary retention each time he took an airplane trip. It was found that this could be avoided if he was given small doses of phenobarbital before flying. It would be ideal to have an antidote or antagonistic drug for whatever undesirable urinary symptoms were encountered, but at the present time few such drugs are available.

CONCLUSIONS

Drugs that affect the sensory nerves of the bladder are not specific. Drugs that affect the motor nerves may be divided into adrenergic and cholinergic. Adrenergic drugs probably have very little effect on the act of micturition. Drugs such as ephedrine may have not only adrenergic but also central action. Cholinergic drugs derive their action by potentiating the action of acetylcholine. Morphine acts directly on the muscle protoplasm. Estrogenic and androgenic hormones derive their effect mainly from action on the erectile tissue.

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PRINCIPLES OF NEUROMUSCULAR REEDUCATION

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Neuromuscular reeducation deals with retraining the brain and spinal cord in voluntary and reflex motor activities. Basic principles of neuromuscular physiology are applied clinically in the treatment of muscle paresis and paralysis. Physiological principles of both the muscular system and the nervous system are utilized, but more particularly the latter; strictly speaking, the term muscle reeducation is a misnomer, for only the nervous system is capable of being educated.

MUSCULAR CONTRACTION

The strength of contraction of a given muscle is determined by the following factors: anatomic and physiological status of the muscle fibers at the time of contraction; number and synchrony of the contracting fibers; number and frequency of nerve impulses reaching the muscle fibers; functional status of the neuromuscular junctions; and structural and functional condition of the tissues surrounding the muscle fibers, such as blood vessels and connective tissue. It will be recalled that individual skeletal muscle fibers follow the "all or none" law, that a single motor fiber, together with its cluster of muscle fibers (usually from 100 to 200 or more), constitutes a motor unit, and that numerous motor units are included in the final common path. Graded responses of either normal or paretic muscles are determined principally by the number of motor neurons acting at one time and by the frequency of their discharges, the former determining the number of fibers contracting and the latter the degree of summation and tetany occurring.

Two types of muscular contraction, namely, isotonic and isometric, are utilized in neuromuscular reeducation. In isotonic contraction the muscle is permitted to move through its range of motion while lifting or moving a maximum load or weight, whereas in isometric contraction the muscle contracts maximally against a load it cannot lift or move. In my opinion, the two types of contraction are equally important in neuromuscular reeducation. They may be utilized clinically by assisting the patient to pull and hold contractions with a given set of muscles. The physician, or other operator, gives the command "Pull," while offering adjusted resistance and guiding the movement throughout the contraction; at the end of the isotonic contraction, the operator gives the command "Hold," pulls on the contracted muscles and moves the joint or joints through either a part or the entire range of motion. Maximal voluntary effort during isotonic and isometric contraction is regarded as one of the cardinal principles of neuromuscular reeducation.

NERVOUS CONTROL OF MOTOR ACTIVITY

Motor activity of skeletal muscles is regulated normally by voluntary and reflex mechanisms. Voluntary contraction is mediated at least in part by the corticospinal system and efferent motor nerves. This portion of the nervous system alone cannot provide voluntary activity, for it has been shown that functionally active reflex arcs must be intact for voluntary movement to take place; Mott and Sherrington [1] found that cutting the posterior nerve roots (deafferentiation) associated with a given group of muscles caused a paralysis. It has been shown experimentally [2] also that stimulation of receptors or sensory nerve fibers of different parts of the body is capable of reinforcing voluntary effort. Clinical observations [3] have shown that simultaneous reflex voluntary contraction of other muscles of the body may also reinforce voluntary contraction. The mechanism involved in producing reinforcement is believed to be that of the neural effects of the proprioceptive afferent impulses acting

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Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

1. Mott, F. W., and Sherrington, C. S.: Experiments upon the Influence of Sensory Nerves upon Movement and Nutrition of the Limbs, Proc. Roy. Soc., London, s.B. **57**: 481, 1895.

2. Sherrington, C. S.: The Integrative Action of the Nervous System, New Haven, Conn., Yale University Press, 1906, pp. 174-180.

3. Kabat, H.: Studies on Neuromuscular Dysfunction: Rhythmic Stabilization: A New and More Effective Technique for Treatment of Paralysis Through a Cerebellar Mechanism, Permanente Found. M. Bull. **8**: 9, 1950.

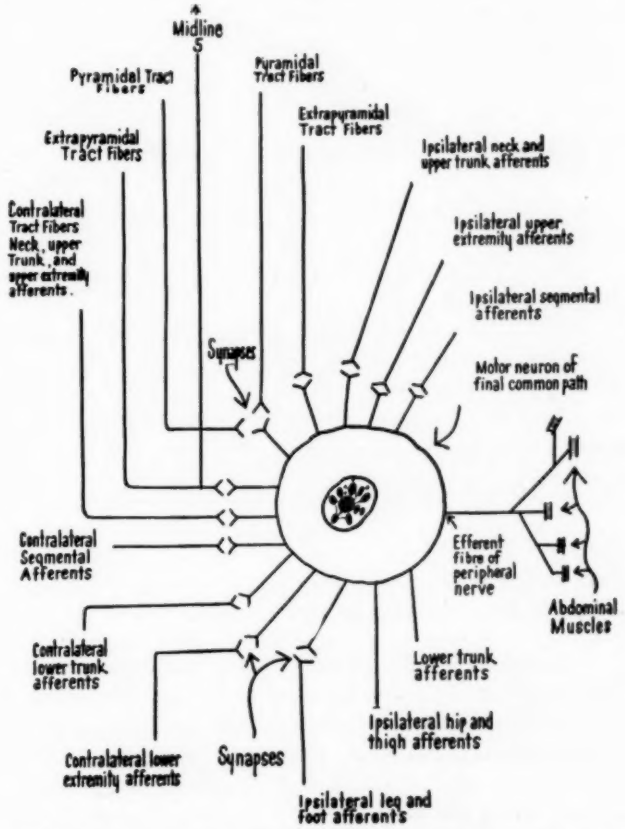
either directly (segmentally or intersegmentally) or indirectly (involving higher centers) on the motor neurons of the final common path. These neural effects take place at the synapse of the motor neurons of the final common path, where an increase in the number of active motor nerves may be effected by a process of synaptic facilitation. The diagram illustrates the various sources of proprioceptive afferent impulses that may be utilized to elicit synaptic facilitation and consequent reinforcement of muscular contraction.

It is apparent from the diagram that it is possible to reinforce voluntary contraction by synaptic facilitation from various regions of the body and that various combinations of contractions may be used; these combined motions are classified as symmetrical or asymmetrical contractions of the upper or lower extremities, or as ipsilateral or contralateral homonymous or reciprocal contractions of an upper and a lower extremity. Maximal isotonic and isometric contraction gives rise to maximal stimulation of proprioceptive receptors, hence their importance in producing synaptic facilitation. Synaptic phenomena such as irradiation, recruitment, summation, and successive induction are involved in facilitation, and these also are dependent largely on the number, frequency, and origin of proprioceptive afferent impulses.

Reinforcement of voluntary contraction by synaptic facilitation, therefore, becomes the second cardinal principle of neuromuscular reeducation. The techniques employed clinically to produce synaptic facilitation may be stated as follows: use of maximal resistive exercises (isotonic and isometric) in involved areas; use of mass motion patterns involving the entire extremity and frequently the neck and trunk muscles as well, instead of exercises for individual weakened muscles; combination of voluntary and reflex contraction of muscles of different parts of the body with such contraction of the paretic muscles; and use of reversal or alternate contraction of antagonistic muscles (contraction of the protagonist followed by contraction of the antagonist). This last technique utilizes the principle of successive induction, and there are several methods of evoking the facilitation response, such as rhythmic stabilization (isometric cocontraction of antagonists while strong external forces are being applied alternately in opposite directions); isotonic reversal contraction of antagonists (slow or fast reversals, for example, alternate contraction of the flexors and extensors of the elbow); and isotonic reversal of antagonists (slow reversal) followed by isometric contractions.

MOTION PATTERNS

It has been shown clinically by Kabat [4] and experimentally by Gellhorn and co-workers,[5] that muscles of the extremities and trunk are grouped together functionally into specific motion patterns and that these patterns involve the rotators of the extremity as well as the flexors, extensors, adductors, or abductors. Analysis of these patterns shows them to be made up of diagonal spiral motions of the extremity and trunk that combine rotation with either flexion or extension of the extremity and trunk. For example, one of the functional patterns of the upper extremity is the flexion-adduction pattern. It consists of flexion, adduction, external rotation of the shoulder combined with elbow flexion, supination of the forearm, radial flexion of the wrist, finger flexion, and thumb adduction. Many similar patterns are grouped to work together for either the upper or the lower extremities, and these may be united with spiral motion patterns of the neck and trunk. Many of these motion patterns, as well as the reversal of antagonists, are used in work and in sports, for example, chopping wood, shoveling sand, digging, and pitching hay, and playing baseball, tennis, squash, or handball. The diagonal, spiral motion patterns are useful in neuromuscular reeducation because they seem to be primitive or basic movements and are easily relearned. They also participate in synaptic facilitation. Use of mass movement exercise and primitive motion patterns is regarded as the third cardinal principle of neuromuscular reeducation.



Schematic diagram to illustrate theoretically the various ways of reinforcing voluntary contraction by synaptic facilitation. Reflex and voluntary contraction of muscles in other parts of the body are developed simultaneously with muscular activity of the part of the body receiving neuromuscular reeducation; contractions increase the number and frequency of proprioceptive afferent impulses, which in turn cause synaptic facilitation either directly or indirectly of the motor neurons of the final common path of the involved area.

REPETITION

As is well known in arts and sports, practice is the basis of all motor learning. Repetition of the resistive exercises used in neuromuscular reeducation is another

4. Kabat, H.: Studies on Neuromuscular Dysfunction: New Concepts and Techniques of Neuromuscular Reeducation for Paralysis, Permanente Found. M. Bull. **8**: 121, 1950; Studies on Neuromuscular Dysfunction: The Role of Central Facilitation in the Restoration of Motor Function in Paralysis, Arch. Phys. Med. **33**: 521, 1952. Kabat.[3]

5. Gellhorn, E.: Proprioception and the Motor Cortex, Brain **72**: 35, 1949. Gellhorn, E., and Johnson, E. A.: Specificity of the Electromyographic Method for the Investigation of the Motor Cortex, ibid. **73** (pt. 2): 275, 1950. Hyde, J., and Gellhorn, E.: Influence of Deafferentiation on Stimulation of the Motor Cortex, Am. J. Physiol. **156**: 31, 1949.

important principle. Complemental resistive exercises of a similar type, using weights and other gymnasium equipment or occupational therapy equipment, are employed extensively to further enhance the training process and to build power, coordination, speed, and accuracy. Repetition, therefore, becomes the fourth cardinal principle of neuromuscular reeducation.

SUMMARY

Voluntary control and acquired reflex behavior of paretic and paralyzed muscles can be established by the use of the cardinal principles of neuromuscular reeducation, namely: maximal voluntary effort during isotonic and isometric contraction; reinforcement of voluntary contraction by synaptic facilitation; use of mass movement exercises and primitive motion patterns; and repetition. A simple formula for expressing the plan of operation of neuromuscular reeducation may be stated as follows: maximal voluntary effort against external resistance, plus maximal synaptic facilitation, plus repetition, plus adequate duration of treatment, equals neuromuscular reeducation.

1815 Ocean Front.

CLINICAL NOTES

A NEW ILEOSTOMY-COLOSTOMY DEVICE WITH A DISPOSABLE PLASTIC BAG AND NO CEMENT

J. DeWitt Fox, M.D.
and
Brock E. Brush, M.D., Detroit

Surgical techniques in performing ileostomy and colostomy have advanced in recent years, but little change has been made in the design of devices for the postoperative comfort of patients undergoing these operations. There are several features that any device should have for collecting the fecal stream from an ileostomy or colostomy stoma. They are: 1. The device should be easily applied. 2. It should be light in weight. 3. It should not be bulky enough to distort the body contour or bulge through clothing. 4. It should be odorless. 5. It should have no irritating properties to macerate or irritate the skin of the abdomen around the ileostomy or colostomy stoma. 6. It should be easy to empty or dispose. These ideal features have been only partially met by the popular rubber-type commercial ileostomy and colostomy bags, and a continuing search is being made to develop an ideal device. The modification here presented was developed after a patient suffered extreme skin irritation and ulceration around an ileostomy stoma because of sensitivity to rubber cement, which had to be applied to keep her ileostomy bag in place.

From the Department of Surgery, Henry Ford Hospital.
The Royal Ileostomy Appliance is manufactured by the Royal Surgical Appliance Co., 230 Washington Square Building, Royal Oak, Mich.

A device was needed that would not require rubber cement and yet would prevent leakage of the ileal contents onto the skin. To avoid any allergenic factor that might be present in a rubber bag, attention was directed to plastic as an ideal material. But something had to be developed to seal the plastic device around the ileostomy stoma to prevent leakage. For this a foam rubber pad was found to be nonirritating, clean, absorbent, and easily washed, forming a soft cushion that would fit any body contour without undue pressure. Best of all, it provided a perfect seal against leakage. Finally, a Plexiglas cone with an incomplete rim was developed to direct the drainage downward into the bag of odorless, disposable, plastic material held in place simply by a rubber compression ring. The entire apparatus, which consists of a foam rubber pad, Plexiglas cone, Plexiglas belt frame, plastic collecting bag, and rubber ring, is held in place by a waist belt that keeps the device comfortably snug and airtight (fig. 1). Simple as the device may seem, it works remarkably well and can be quickly slipped on

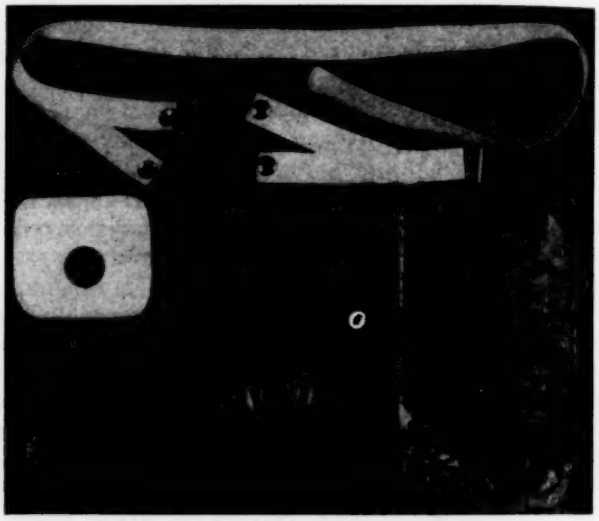


Fig. 1.—Apparatus disassembled.

and off by the patient. No rubber cement is necessary. The first patient to use this device has worn it all day without leakage and, although she has an allergic tendency and sensitive skin, has had no irritation since beginning its use one year ago.

TECHNIQUE OF USE

Application.—The skin is washed and dried. A little talcum is applied to the pad to make the skin smooth and absorbent of perspiration and to give a pleasant odor. The foam rubber pad, with Plexiglas cone and Plexiglas frame, is then applied, the belt snapped on the frame, a plastic bag placed over the cone, and a rubber compression ring applied over the rim to hold the bag in place (fig. 2). This is accomplished in one minute or less, in contrast to the rather messy, prolonged procedure needed with rubber adhesives. Since this is an almost airtight arrangement, the chance of odor escaping is reduced to a minimum.

Emptying.—To empty the bag, the rubber ring is stretched to allow the bag to slip from the rim of the Plexiglas cone. The bag with its contents is discarded.

A new odorless, transparent plastic bag is then applied. This is done without finger contamination in a matter of seconds. An added advantage is that the patient can observe the character of the ileal contents quickly through the transparent bag (fig. 3).

PATIENT ACCEPTANCE

While many patients dislike changing a routine to which they have become accustomed, we have found that patients who have switched from the rubber-type bag to this plastic bag are all well pleased. They report that it is more convenient, lighter in weight, less bulky, odorless, and has the added advantage of being quickly disposable. The bag is equally adaptable to a colostomy stoma; however, its greatest value is appreciated by the patient who has undergone ileostomy and has the constant threat of skin sensitivity due to rubber cement. The device is made to a patient's individual measure and can be made to fit any size ileostomy or colostomy stoma. The smallest ileostomy stoma to which it has been applied is that of an 18-month-old infant. Surgeons and nurses alike appreciate the advantage of having an ileostomy device that can be applied early in the postoperative period. Having an ileostomy bag that can be used as early as four days postoperatively hastens the early ambulation of the patient and serves as a morale factor, helping the patient resume a normal life immediately. The fact that the bag can be applied within a

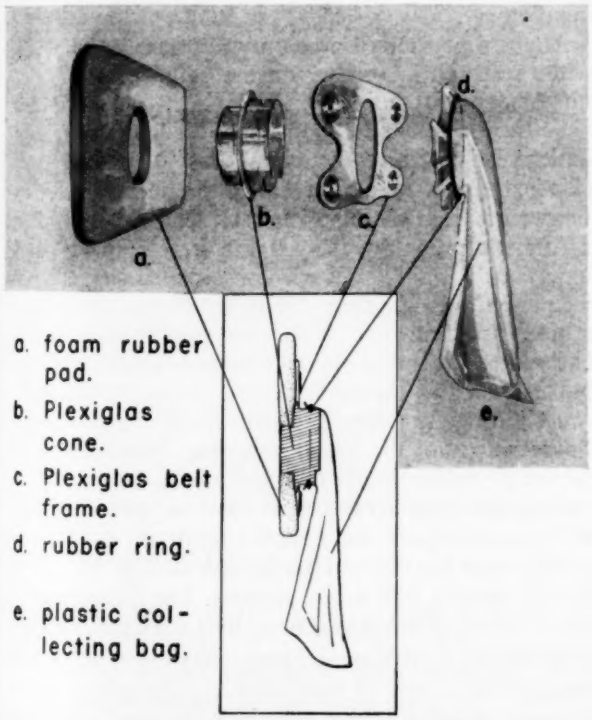


Fig. 2.—Parts of apparatus in order of assembling.

few days postoperatively, or almost immediately if the ileostomy stoma begins working, is a boon to the nursing care of these patients. Nurses can be readily taught to remove the disposable bag with its contents without skin contamination. This is far preferable to and cheaper than cotton abdominal pads that are used in great quantity. Another advantage of the Royal Ileostomy Appliance is that it requires no cement, which might serve as a wound contaminant or as a nidus for infection if applied directly over the wound. It seals against leakage and effectively directs the fecal stream into the bag.

SUMMARY

The Royal Ileostomy Appliance, a device for artificially collecting the fecal stream after ileostomy or colostomy, has met with complete patient acceptance. It has been successfully used on 300 patients ranging in age from 18 months to 85 years. It meets the ideal criteria for such a device: it is convenient, cementless, odorless, disposable, lightweight, nonallergenic to skin or mucosa, and fits body contours smoothly. This device is presented as an advance in the postoperative care of the patient who has undergone ileostomy or colostomy that should make this type of operation a minimal handicap and inconvenience to the patient.

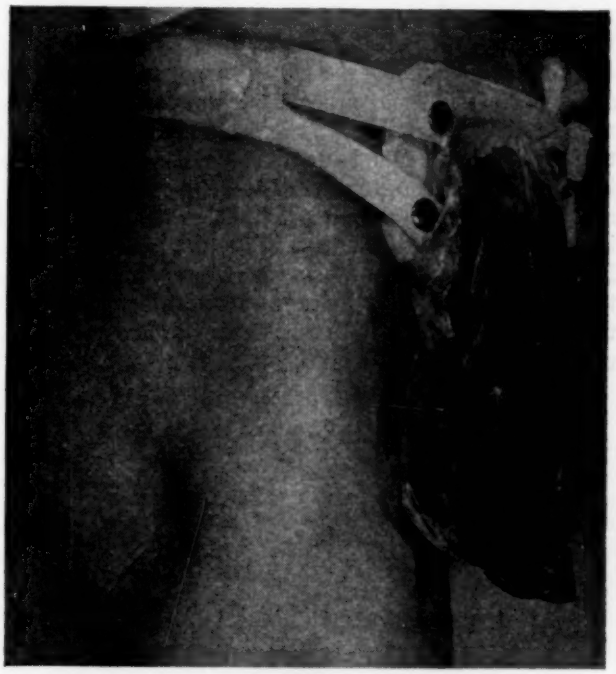


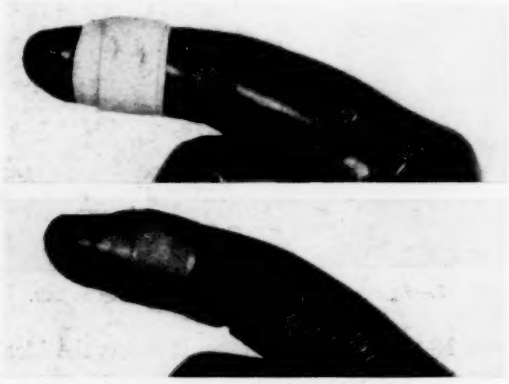
Fig. 3.—Apparatus in position, held with snap-on belt.

Vitamin A Deficiency and Urinary Lithiasis.—There are a number of regions of the world, among them Mesopotamia, North India and South China, which are known as "stone areas," since urinary stone is much more common in these regions than elsewhere. As a rule, these areas are hot and arid, which would lead to scanty urine with a high concentration of urinary salts. Almost all those who develop stone in these regions belong to the poorest stratum of society, existing on poorly balanced and inadequate diets, consisting for the most part of rice or grain. Milk, fruit, meat and vegetables are seldom had, and then only in small amounts. Studies have shown that the common denominator which these diets exhibit is lack of vitamin A. As far back as 1917, stones were produced experimentally in rats by diets deficient in vitamin A, and this work has been repeated successfully by other workers since. Steiner and co-workers demonstrated that the plaques of desquamated epithelium found in vitamin A deficiency in guinea pigs might act as nuclei for the precipitation of crystalloids. Thus there seems little doubt that deficiency in vitamin A is an important factor in calculus formation in these "stone areas."—R. Chute, M.D., The Medical Management of Urinary Lithiasis, *Medical Clinics of North America,* September, 1954.

THE TECHNIQUE OF OPENING THE STENOTIC MITRAL VALVE

Claude S. Beck, M.D., Cleveland

At the present time the surgeon who does cardiac surgery has his own method for opening the stenotic mitral valve. Every surgeon approaches the valve through the auricle and opens the valve either by a cutting device or by finger dilatation. I should like to report on the method I have found to be most useful and safest. It consists in introducing the gloved finger into the orifice of the mitral valve and either dilating or tearing the commissures by passing the first joint of the finger through the orifice. The finger is then removed. Umbilical tape is wrapped around the first joint of the finger (see figure), and a second glove is applied. The finger is then inserted into the orifice of the mitral valve, and the stenosis is further reduced by the tape-wrapped finger. This dilatation can be repeated so that the valve can be enlarged to the desired degree. I have considered a diameter of 2.2 cm. to 2.5 cm. to be adequate for circulation in an adult.



Umbilical tape wrapped around the gloved finger (above) and a second glove placed over the tape-wrapped finger (below). The stenotic mitral valve can be dilated to the desired size by the repeated insertion of the finger wrapped with additional tape.

The circumference of the dilated valve can be determined by measuring a piece of silk that has been placed around the gloved, tape-wrapped finger. Sometimes the commissures give way, and the orifice opens to a diameter of 3 cm.

During the past 15 months I have used this method of enlarging the orifice of the stenotic mitral valve on about 200 patients. After I began to use this method I found it was not necessary to cut the valve. In several instances some difficulty was encountered at two areas of the operation. One of these was in opening the valve itself with the dilator. The valve did not readily give way, and it appeared that excessive pressure would be required to force the dilator through the orifice. This was taken care of by removing some of the tape from the finger and opening the orifice in one or two stages. For example, the first dilatation might open the valve to 2 cm., the next to 2.3 cm., and the third to 2.5 cm. The other difficulty was encountered in introducing the dilator through the appendage of the left auricle. In some instances it was necessary to dilate the base of the auricle in order to enter the auricle. In several instances the base of the appendage was torn and the tear extended somewhat beyond the base of the appendage; however, this aspect of the problem could be solved without too much difficulty. There are two ways by which this can be done. One is by placing one or more repair sutures through the auricular wall before the finger is withdrawn from the auricle. (A tear in the auricle can be repaired more readily with the finger inside the auricle, because the finger can stop the bleeding and give a better exposure of the wound.) The other method is to enlarge the area included in the purse-string beyond the base of the appendage so that the tear in the auricular wall is controlled by the purse-string after the finger is removed.

It is my opinion that this method of opening the valve has almost eliminated the creation of mitral valve regurgitation produced as a complication of valvulotomy. In my experience regurgitation has been created in few instances when it was not present before valvulotomy was done. The simplicity of this method and the almost complete lack of danger of producing regurgitation enable me to recommend it as the preferable method for mitral valvulotomy.

About a quarter of a century ago I spent two years in the research laboratory on the problem of relieving mitral stenosis by surgical operation. This work was done while I was a research fellow under the late Dr. Elliot C. Cutler.[1] I devised a valvulotome that Dr. Cutler used.[2] This instrument cut a piece out of the stenotic valve and removed it from the blood stream. The creation of this instrument probably delayed the development of the operation for mitral stenosis by some 20 years. I have been asked this question: "Why did Cutler stop the operation for mitral stenosis?" There were several reasons. The valves that we examined were calcified and rigid, and it looked as though a piece of valve should be cut away in order to relieve the stenosis. It is probable that the pathology of the mitral valve has been changed by the use of sulfonamides and antibiotics, for we did not then see soft, pliable valves that could be opened by finger dilatation. Furthermore, I cannot recall any words of encouragement for Cutler after he operated on his seventh and last patient with mitral stenosis. The record was not good, and there was a barrier against the work. One successful result such as occurs repeatedly today would have changed the history of heart surgery. The comment that we made in 1929 [3] bears repetition because it mentions both the problems and their solution:

From the foregoing summary of cases, it will be seen that three kinds of procedures were utilized in the attempts to enlarge the stenotic orifice. These methods were finger dilatation, incision of the stenotic valve and excision of a segment of the stenotic valve. We have not had any experience with dilation of the stenosis. We feel, however, that the method may be worthy of trial. A small instrument similar to the Kollmann's dilator of the urologist could be devised, and this instrument could be inserted into the stenotic ring and the latter stretched and dilated. It will be seen that the only two patients of the series living are

Professor of cardiovascular surgery, Western Reserve University and University Hospitals; consultant in cardiac surgery, Mt. Sinai Hospital.

1. Cutler, E. C.; Levine, S. A., and Beck, C. S.: Surgical Treatment of Mitral Stenosis: Experimental and Clinical Studies, Arch. Surg. **9**: 689 (Nov., pt. 2) 1924.

2. Beck, C. S., and Cutler, E. C.: Cardiovalvulotome, J. Exper. Med. **40**: 375 (Sept.) 1924.

3. Cutler, E. C., and Beck, C. S.: Present Status of Surgical Procedures in Chronic Valvular Disease of Heart: Final Report of All Surgical Cases, Arch. Surg. **18**: 403 (Jan., pt. 2) 1929.

those on whom dilatation was done. Incision of the stenotic valve was carried out in four cases. From our experience in cases 5 and 6, we felt that the enlargement effected by a simple incision of the stenotic valve was inadequate. We then devised an instrument which could excise a segment from the valve and remove it from the blood stream. This instrument was used in five cases. In each of the four patients that we operated on, some difficulty was experienced in orientation within the heart. We feel at the present time that that is one of the most serious problems in cardiac surgery. The cardioscope devised by Allen and Graham affords a slight degree of visualization of the endocardium at the point of contact with the instrument. The examination that can be carried out with this instrument, however, is so slight that we have not used it in any human cases.

Finally, it may be that we already have the evidence that the success in the finger dilatation method and the success in our first case are due to the fact that only a slight change was made in the size of the orifice of the valve. It may be that the cardiovalvulotome with its actual removal of a piece of valve creates a too sudden change. We know that all the changes created by nature are slow and gradual; could we return a stenotic valve to the insufficient type by a gradual procedure, we might well achieve success. This question unfortunately cannot be answered until we can experimentally produce stenosis similar to what occurs in man, and then suddenly change this to an insufficiency. We have convinced ourselves that a simple knife cannot enlarge a typically stenosed, thickened and often calcareous valve; we do not know whether the actual removal of a piece of the valve by the powerful cardiovalvulotome is deleterious or not. And we have not yet available evidence as to what excision of a segment of a stenosed valve will result in when the operative procedure is simplified (as performed in our last case), and the postoperative course, therefore, less of a strain on the already lowered vitality.

It may seem that the information obtained from the twelve cases of chronic valvular disease in which operation was performed is so meager that further attempts are not justified. However, in view of the preceding discussion, we feel that a few more attempts are necessary in order to answer certain questions already mentioned. Should it be possible to produce experimental stenosis, these questions could be answered in the laboratory. Unfortunately, our own attempts for seven years along this line have been as unsuccessful as the attempts of other and more experienced investigators.

It is our conclusion that the mortality figures alone should not deter further investigation both clinical and experimental, since they are to be expected in the opening up of any new field for surgical endeavor.

2065 Adelbert Rd. (6).

THE IN-BED SCALE

A NEW SCALE FOR UNIVERSAL HOSPITAL USE

E. F. Schmerl, M.D.
and
Albert L. Upton, M.D., Oakland, Calif.

Clinical reports concerned with water and electrolyte balance emphasize the importance of body weight and its daily fluctuations as one of the indispensable sources of laboratory data. In the postoperative state, an insidious accumulation of fluid or dehydration in the patient may be prevented by daily weight records. We know the danger of overhydration in patients with oliguria or in patients recovering from acute renal insufficiency. In addition, there are special situations of operative stress as in patients with Addison's disease, hypopituitarism, and other endocrine diseases in which the determination of body weight changes is an essential part of management. Every clinician dealing with this problem of body weight changes has been aware of the difficulties that arise when the patient is bedridden. He has to rely on weighing equipment that is expensive, time consuming, and cumbersome, or he has to revert to makeshift arrangements. Weighing the bedridden patient usually requires removal of the patient from bed with its attendant inconveniences, dangers, and inaccuracies.

One of us (E. F. S.) has developed and designed a scale that can be used to weigh bedridden and ambulatory patients. It is easily wheeled by one person, is simple to operate, and takes up less than 2 ft. square of floor space. This scale (fig. 1) consists of: 1. A commercially available 500 lb. pillar and beam scale sensitive to 2 oz., that forms the basis. 2. A small hydraulic jacking device mounted on the platform that supports the superstructure. Welded on top of this is a second platform that can be elevated by a foot pedal and lowered by a hand lever. 3. The forklift device, the chief characteristic of this model, made of 1½ in. tubing, that is welded to the upper platform. The prongs of the "fork" are 18 in. apart. The lower prongs project under the bed, and the upper prongs extend above the mattress. 4. A weighing board made of plywood, mounted on top of the "fork," padded with foam rubber, and covered with oilcloth. While transporting or storing the scale the board is kept upright; when in use it is locked in a horizontal position.

Fig. 1.—In-bed scale in storage position with the weighing board upright. Mounted on rubber wheels, the scale can be moved and turned by one person.

From the Department of Medicine, Highland Alameda County Hospital.
This study was aided by a grant from the Professional Staff Fund.
The scale described in this paper was built by the Acme Scale Company, Oakland, Calif., for the Highland Alameda County Hospital. The patent is pending.

PROCEDURE OF WEIGHING

With this in-bed scale the procedure of weighing is surprisingly simple. The scale is rolled to the bedside, and the board is tilted to the horizontal position and locked (fig. 2*A*). The board, resting on the upper prongs, is jacked up by means of the foot pedal until it is just above the top of the mattress. The patient is turned over slightly to make room for the board on the mattress. The scale is pushed toward the bed and under it, automatically positioning the upper prongs with the narrow weighing board over the mattress. In this position the "fork" surrounds the mattress on three sides. The board is lowered until it rests on the mattress, and the patient is easily placed on it. The board is then jacked up just above the mattress, and the patient is weighed (fig. 2*B*). After the weighing is concluded the board is lowered to the mattress, the patient moved off, and the scale removed. During the entire process, the patient has not been removed from his bed.

With the board in an upright position the new scale can be used to weigh the standing or sitting ambulatory patient. Our model has been in use at the Highland Alameda County Hospital for eight weeks, and during that time it has received wide applications in the medical wards, where 6 to 10 weighings were done daily, amounting to a total of more than 380 weighings. The scale is simple to operate, and a hospital aide or orderly after brief instructions can be safely entrusted with it. The average weighing time was found to be about three minutes. It usually takes one person, sometimes two, to accomplish the weighing. When the patient is unconscious and heavy, a third helper may be required. To achieve accurate results continual supervision, repeated briefing on a general hospital level, and indoctrination as to the vital importance of the daily weight fluctuations are essential. Hospital personnel ought to be thoroughly acquainted with the consequences of laxity and errors in weighing and should exhibit the same exacting attitudes toward weight records as they do to other laboratory reports.

Fig. 2.—*A*, scale has been wheeled to the bedside. Weighing board has been leveled and jacked up above the level of the mattress. *B*, the board has been jacked up clear of the mattress. The patient is weighed alone and directly. The board is then quickly lowered and the scale withdrawn.

SUMMARY

A new kind of scale for weighing a patient in bed is simple, safe, mobile, compact, accurate, economical, and weighs the patient directly "within the bed," but "without the bed." If readily available in every ward of a hospital it can also be used, as a universal hospital scale, with the patient standing or sitting on it.

2933 Webster St. (9) (Dr. Schmerl).

COUNCIL ON FOODS AND NUTRITION

The Council on Foods and Nutrition has authorized publication of the following statement.

JAMES R. WILSON, M.D., *Secretary.*

THE JOSEPH GOLDBERGER AWARD IN CLINICAL NUTRITION—1954

The role of nutrition in the maintenance of health and in the effective treatment of disease has received increasing recognition in recent years. Among early and important contributors to knowledge in this field was Dr. Russell Wilder, whose significant accomplishments and sustained interest in nutrition have led to his selection as the recipient of the Joseph Goldberger Award in Clinical Nutrition for 1954.

Dr. Wilder, who was professor and head of the department of medicine at the Mayo Clinic for many years, is perhaps best known for his studies of carbohydrate metabolism and diabetes mellitus. His authoritative articles on the dietary management of diabetes and the use of various types of insulin in the treatment of this disease are used extensively in teaching and medical practice. His notable contributions on many other aspects of nutrition and metabolism include studies of induced thiamine deficiency in man, of electrolyte disturbances in pathological conditions of the adrenal gland, and of calcium metabolism in diseases of the parathyroid glands. In 1944 and 1948, he participated in nutrition surveys in Newfoundland in which the influence of changes in nutrient intake on the health of a large population group was evaluated. Throughout his many medical writings, Dr. Wilder has repeatedly emphasized the importance of nutrition in the practice of medicine and in public health. His interest in people, his contagious enthusiasm for research and its application to human problems, and his undaunted optimism, even in the face of serious difficulties, have stimulated and invigorated his many students and associates.

As a member and executive of numerous scientific and professional organizations, Dr. Wilder has profoundly influenced nutritional attitudes and policies not only in the medical profession but in the country as a whole. His inspiring leadership is documented by the many important positions he has occupied. For 21 years he served as an editor of the *Archives of Internal Medicine*. He has been a member of the Council on Foods and Nutrition of the American Medical Association, president of the American Diabetic Association, chairman of the committee on medicine of the National Research Council, chief of the civilian food requirements branch of the U. S. War Food Administration, and director of the National Institute of Arthritis and Metabolic Diseases. He participated in the organization of the Food and Nutrition Board of the National Research Council in 1940 and was the first chairman. He remained a member of the board until 1950, during which time he guided many of the board's important committees. His extensive knowledge of nutrition and good judgment assisted greatly in developing the recommended dietary allowances of the National Research Council and in furthering the food enrichment program.

It seems particularly appropriate that the Joseph Goldberger award was presented to Dr. Wilder at a meeting of the Food and Nutrition Board on Nov. 5. At this time, Dr. Wilder reviewed the origin and early activities of the board. The award is presented by the American Medical Association through the Council on Foods and Nutrition and is made possible by a grant from the Nutrition Foundation. Previous recipients of the award have been Dr. Randolph West, Dr. Fuller Albright, Dr. Henry Sebrell, and Dr. James McLester.

ACCEPTED FOODS

The following products containing non-nutritive artificial sweeteners intended for use in sodium-restricted as well as carbohydrate-restricted diets have been accepted by the Council. Data regarding composition represent the best available information, which is based on submitted reports of analyses. The Council has requested continuing analytical studies, especially of the sodium content of products intended for use in sodium-restricted diets, because of the natural variations in the composition of processed foods. Artificial sweeteners have been added for those who desire a sweet taste but who must restrict their use of ordinary sugar.

JAMES R. WILSON, M.D., *Secretary.*

Flotill Products, Inc., Stockton, Calif.

Tillie Lewis Tasti-Diet Brand Dietetic Pack Artificially Sweetened Apricots, Unpeeled Halves.

Ingredients: Unpeeled apricot halves packed in water artificially sweetened with saccharin and cyclamate calcium. (No added sugar or salt.)

Analysis (submitted by manufacturer).—Total solids 10.0%, moisture 90.0%, ash (minerals) 0.41%, fat (ether extract) 0.2%, protein (N × 6.25) 0.4%, crude fiber 0.4%, pectin 0.8%, total carbohydrates (by difference) 8.4%, reducing sugars 3.3%, total sugars 6.2%, available carbohydrates (total carbohydrates minus crude fiber and pectin) 7.3%, acidity (as citric acid) 0.57%, sodium 8 mg./100 gm., soluble saccharin 0.02%, cyclamate calcium 0.006%.

Available Calories (calculated from available carbohydrates and citric acid).—0.34 per gram; 10 per ounce.

Use.—In carbohydrate-restricted, calory-restricted, and sodium-restricted diets.

Tillie Lewis Tasti-Diet Brand Dietetic Pack Artificially Sweetened Apricots, Whole, Peeled.

Ingredients: Whole peeled apricots packed in water, sweetened with saccharin and cyclamate calcium. (No added sugar or salt.)

Analysis (submitted by manufacturer).—Total solids 7.8%, moisture 92.2%, ash (minerals) 0.34%, fat (ether extract) 0.04%, protein (N × 6.25) 0.4%, crude fiber 0.3%, pectin 0.7%, total carbohydrates (by difference) 6.4%, reducing sugars 2.7%, total sugars 2.7%, available carbohydrates (total carbohydrates minus crude fiber and pectin) 5.4%, acidity (as citric acid) 0.59%, sodium 19 mg./100 gm., soluble saccharin 0.02%, cyclamate calcium 0.006%.

Available Calories (calculated from available carbohydrates and citric acid).—0.25 per gram; 7 per ounce.

Use.—In carbohydrate-restricted, calory-restricted, and sodium-restricted diets.

The following products have been accepted as conforming to the rules of the Council.

JAMES R. WILSON, M.D., *Secretary.*

Gerber Products Company, Fremont, Mich.

Gerber's Strained Garden Vegetables.

Ingredients: Peas, carrots, spinach, water, and salt.

Analysis (submitted by manufacturer).—Total solids 10.59%, moisture 89.41%, ash 1.16%, fat (ether extract) 0.46%, protein (N × 6.25) 2.15%, crude fiber 0.84%, carbohydrates other than crude fiber (by difference) 5.98%.

Vitamins and Minerals	Mg. Per 100 Gm.
Vitamin A (carotene)	2.5125
Thiamine	0.0779
Riboflavin	0.0559
Ascorbic acid	3.56
Niacin	0.783
Calcium	33.7
Phosphorus	40.7
Iron	1.45

Calories.—0.37 per gram; 11 per ounce.

Use.—In the feeding of infants, convalescents, and others requiring a soft diet.

Armour and Company, Chicago, Packer; Gerber Products Company, Fremont, Mich., Distributor.

Gerber-Armour Strained Lamb.

Ingredients: Meats (trimmed of fat, sinews, and connective sheaths) with added salt, prepared under inspection of the Meat Inspection Division of the United States Department of Agriculture.

Analysis (submitted by manufacturer).—Total solids 20.9%, moisture 79.1%, ash 1.8%, fat 5.9%, protein (N × 6.25) 13.2%, crude fiber none, carbohydrates other than crude fiber (by difference) none, sodium 210 mg. per 100 gm.

Vitamins and Minerals	Mg. Per 100 Gm.
Thiamine	0.013
Riboflavin	0.147
Niacin	2.96
Ascorbic acid	.....
Vitamin A	.....
Calcium	12
Phosphorus	105
Iron	3
Potassium	180

Calories.—1.06 per gram; 30 per ounce.

Use.—In the feeding of infants, convalescents, and others requiring a soft diet.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

APPARATUS ACCEPTED

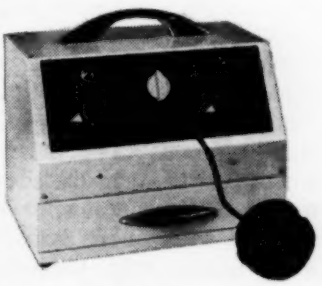
The following additional product has been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

RALPH E. DE FOREST, M.D., *Secretary.*

Sherman Muscle Stimulator, Model ME1

Crest Laboratories, Inc., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N. Y.

The Sherman Muscle Stimulator, Model ME1, is a generator of electric currents for stimulating normally innervated voluntary muscle. The instrument is not intended for diagnostic use. The body of the instrument measures 27 (height) by 45 by 30 cm. (10½ by 18 by 12 in.) and weighs 7.3 kg. (16 lb.). It is shipped in a carton measuring 29 by 47 by 34 cm. (11½ by 18½ by 13½ in.) and weighing 9 kg. (20 lb.). It requires 60 cycle alternating current at 110 to 120 volts and draws 50 to 100 watts. Accessories include a bipolar pad, a connecting cord, a bottle (30 cc.) of fluid for moistening the electrodes, a line cord, three pad-fastening straps, and an instruction booklet.



Sherman Muscle Stimulator, Model ME1

The apparatus delivers two kinds of current. One consists of single abrupt shocks that can be made to follow each other at any desired frequency, from 1 to 100 per second. The other consists of an amplitude-modulated (surging) alternating current; its carrier frequency is 700 per second, and its amplitude is built up, maintained, and reduced cyclically, with the number of such modulation cycles per second being determined by setting a dial.

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UTERINE FIBROIDS

Uterine fibroids are said to be the commonest of all tumors. Kellar [1] states that they are found in 25% of all women examined at autopsy, and Irwin [2] says that 50% of all women over 50 years of age have them. Since they increase in size only during the years when a woman is menstruating, it is believed that they are in some way related to ovarian function, but the exact cause of these tumors is not known. Kellar found that 25% of those removed surgically were associated with endometriosis. In a series of 58 patients, Jones [3] found multiple tumors in 42 and hyaline degeneration in 51. None of the patients in his series showed any evidence of malignant degeneration. Kellar states that sarcomatous changes occur in less than 1%, and Irwin found sarcoma in 0.3% of a series of 632. If sarcomatous degeneration does occur the chances for a five year cure even after hysterectomy are poor. It was once believed that fibroids predisposed to adenocarcinoma of the uterus, but there is no evidence that this is so.

Fibroids are usually present several years before any symptoms occur, and a large proportion remain asymptomatic throughout life. The submucous type are likely to cause menorrhagia, and this is the cause of the patient seeking medical advice in about 50% of cases. Although fibroids may grow to a very large size they are usually removed because of pressure symptoms before this can occur. Although low back pain, nocturia, frequency of urination, constipation, hemorrhoids, and varicose veins are frequently associated with fibroids, Irwin warns against attributing these to the tumor, as in many patients removal of the fibroids fails to relieve the associated signs and symptoms. In his rather large series there was little correlation between the site and size of the tumor and the recorded symptoms. It seems evident, however, that in some women fibroids are a cause of sterility and that many women with fibroids have a late or prolonged menopause.

The most controversial point with regard to fibroids is whether all should be removed and if so what type of operation should be performed. All will probably agree that if the fibroids are producing symptoms they should be removed, but Doyle [4] states that hysterectomy for asymptomatic fibroids smaller than a two month pregnancy (size of a small orange) should be discouraged. Many physicians advise no treatment for even larger fibroids if they are asymptomatic. If a woman with small intramural fibroids becomes pregnant Kellar advises no treatment for the fibroids. Irwin observed that subtotal hysterectomy was followed by fewer complications than total hysterectomy, but he prefers removal of the entire uterus because of the danger of carcinoma developing in the stump. If the patient is in the childbearing period and desires pregnancy it is often possible to conserve the uterus by performing a myomectomy. Jones advocates this procedure in such patients even in the absence of symptoms as a means of increasing the chances for conception. Eleven of the 58 patients on whom he performed a myomectomy subsequently bore one or more children. Nine of these had been unable to conceive prior to operation. He calls attention to the fact that in those who did not conceive after operation other factors may have contributed to their sterility. Some have argued that because of the possibility of recurrence myomectomy is useless, but in 32 patients in Jones' series in follow-up periods of over five years there were only two recurrences. These both occurred 10 years after operation and the tumors were only one inch in diameter.

There appears to be a growing tendency toward conservative treatment of uterine fibroids in women of all ages. Even though the mortality rate following total removal of the nonmalignant uterus is less than 0.25%, conservative treatment should give rewards in greater health and happiness of the many women who have this type of tumor.

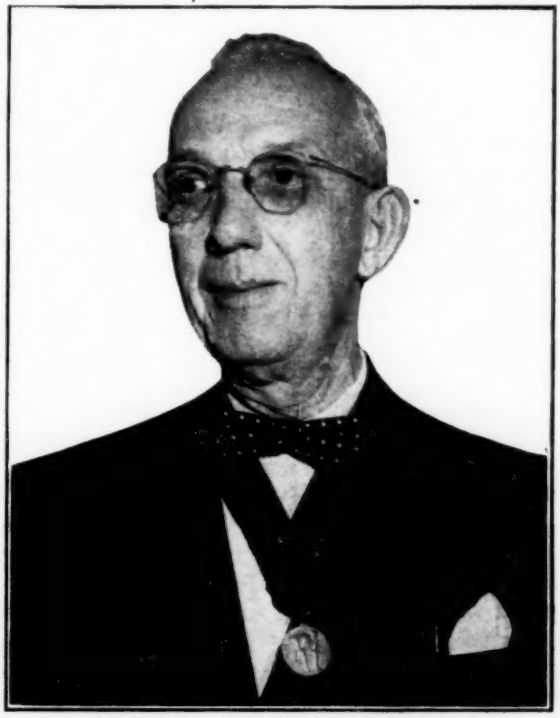
1. Kellar, R. J.: Fibroids and Their Management, Practitioner **171**: 483-491 (Nov.) 1953.
2. Irwin, R. W.: Uterine Fibromyomas, Surg., Gynec. & Obst. **97**: 702-708 (Dec.) 1953.
3. Jones, G.: Twenty Years' Experience with Myomectomy During the Childbearing Period, J. Internat. Coll. Surgeons **20**: 703-706 (Dec.) 1953.
4. Doyle, J. C.: Unnecessary Hysterectomies, J. A. M. A. **151**: 360-365 (Jan. 31) 1953.

SAFE DRIVING DAY

December 15, 1954, is S-D Day. On this day, every American is asked to do what he should do every day—try his utmost to prevent all traffic accidents. This all-out one day effort is planned in the hope of dramatically highlighting the problem of our frightening traffic accident toll and to enlist continued public cooperation for traffic safety. S-D Day, the culmination of a 30-day traffic safety campaign, was planned by the President's Action Committee for Traffic Safety, in line with President Eisenhower's firm conviction that concerted public effort can result in a drastic decrease in deaths and injuries on the highway. The traffic safety group has asked the cooperation of physicians because of their long interest in the problem. Pedestrians and drivers will be asked to follow these safety procedures: 1. Observe the letter and spirit of all traffic regulations. 2. Be courteous to every driver and pedestrian. 3. Give full attention to driving and walking. In short: "Drive and walk as you would have everyone else drive and walk." The test confronting every individual and community will be to remain free of traffic accidents for the 24 hour period of Safe Driving Day; however, the President's Committee has pointed out that S-D Day is not a substitute for constant traffic safety efforts. The major objective of the program is to encourage the public to make every day an S-D Day.

THE GENERAL PRACTITIONER'S AWARD

At the annual Clinical Meeting of the American Medical Association in Miami, Fla., Nov. 29, 1954, the annual General Practitioner's award, consisting of a gold medal and a citation was given to Dr. Karl B. Pace, who has practiced medicine in Greenville, N. C., for nearly 40 years except for his military service in World War I. The selection of Dr. Pace as the typical family doctor of 1954 was announced at the opening session of the House of Delegates by Dr. Dwight D. Murray of Napa, Calif., chairman of the Board of Trustees. Dr. Pace completed the first two years of his medical training at the University of North Carolina and then went to Philadelphia, where he received the degree of doctor of medicine from Jefferson Medical College in 1914. After an internship at Gouverneur Hospital in New York City and at Nassau Hospital in Mineola, N. Y., he returned to North Carolina in 1916 and began a career that has been devoted to helping his fellow men and to the betterment of his profession. Dr. Pace was a leader in the reorganization of the Pitt County Medical Society, a president of the Tri-State Medical Society, and for six years a member of the North Carolina Board of Medical Examiners and is a member of the Seaboard Medical Society, the American Academy of General Practice, the Medical Society of the State of North Carolina, and the American Medical Association and head of the Atlantic Coast Line Surgeons Association. He was a member also of the original committee to reorganize the medical college of the University of North Carolina, which led to the establishment of a four year medical school in his state. He, with three other physicians, led a movement many years ago to build the first hospital in Pitt County, for which all four physicians mortgaged their homes and borrowed money on their insurances and other valuables. In 1920 Dr. Pace started the first venereal disease clinic in North Carolina. His civic activities include directorships with the Boy Scouts, the Red Cross, the chamber of commerce, and a bank. He was chairman of the Greenville Utilities Commission for years, president of the Greenville Rotary Club, and an organizer of the Greenville American Legion Post and of the Pitt County Executives Club. He has been chairman of the finance committee of the Jarvis Memorial Methodist Church for 25 years and active in the work of the Community Chest and the March of Dimes campaign of the National Foundation for Infantile Paralysis. Dr. Pace has three sons, two of whom are physicians, while the third recently completed the senior year at the University of North Carolina. When earlier this year, he was selected by the Medical Society of the State of North Carolina as the general practitioner of the year, the mayor of Greenville said, "He is loved and respected by the rich and poor alike as he has unstintingly given of himself to all who have called upon him not only for medical treatment but for business and spiritual assistance in times of need. Although busy day and night with the practice of his medical profession he has somehow been able to find the time to be outstanding in almost every important civic endeavor of this city." His type of service is described also by a colleague who said, "In spite of the enormous demands made upon his time and strength by virtue of his professional, religious, and civic activities, Dr. Pace has never become too busy to stop and listen to people's troubles and to try to help in solving their problems through sympathetic counsel, encouragement and financial aid."



KARL B. PACE, M.D.

The Annual General Practitioner's award of the American Medical Association has been awarded to seven other physicians since it was first given in 1948. They are Archer Chester Sudan, Kremmling, Colo.; the late William L. Pressly, Due West, S. C.; Andy Hall, Mount Vernon, Ill.; the late Dean Sherwood Luce, Canton, Mass.; Albert C. Yoder, Goshen, Ind.; John M. Travis, Jacksonville, Texas; and Joseph I. Greenwell, New Haven, Ky.

A HEARTENING EXAMPLE

The relationship between the medical profession and the United Mine Workers of America provides a heartening example of how labor and medicine, when each side is presented by medical leaders sincerely devoted to high standards and imbued with a desire for mutual understanding, can work together amicably and effectively in a program to improve medical care for workers. A striking spirit of good will and cooperation dominated the third Conference on Medical Care in the Bituminous Coal Mine Area, held recently in Huntington, W. Va., and reported on page 1408 of this issue of THE JOURNAL. The atmosphere this year was in marked contrast to that of the first conference two years ago, when the air was charged with complaints, fears, and sharp disagreements.

The intervening two years have brought great improvement not only in liaison and mutual understanding but also in medical facilities and the quality of medical service. At Huntington, where the delegates voted unanimously to meet again next year, the consensus was that the annual conferences sponsored by the American Medical Association have helped to widen the areas of agree-

ment, narrow the areas of disagreement, and clear the air of antagonisms and distrust. The key to this progress probably is the fact that the United Mine Workers' medical program has been directed by outstanding physicians with a respect for the traditions of American medicine. Dr. John D. Winebrenner of Knoxville, Tenn., an area medical administrator for the U. M. W. A., expressed it this way in his report at the Huntington conference: "Five years ago a great labor union placed its confidence in the medical profession to inaugurate a program of medical care that has been an innovation to organized medicine in the coal bearing regions as well as on a state and national level. Experimentation has been necessary, but at no time has it been questioned that it was a professional responsibility to blueprint and develop the program. During this time the professional relations have been governed by professional hands. The successes and failures have been, at least, joint responsibilities of the Fund medical officers and the participating profession."

Another pertinent comment on this relationship was made during a recent radio interview by Dr. Warren F. Draper of Washington, D. C., executive medical officer of the U. M. W. A. Welfare and Retirement Fund. Answering the question, "How does the American Medical Association react to your program?", Dr. Draper replied: "The American Medical Association, through its national and constituent bodies, and liaison committees created for the purpose, has provided invaluable assistance. I know of no other agency that would be in a position to appoint a survey team of competent neutral observers to go into some of the coal mining areas, explain their purpose to the presidents and other officers of the state and local medical societies, and in company with them visit the problem areas and obtain first-hand knowledge of the conditions of medical practice and the steps and measures necessary to bring about improvements. I know of no other agency that would then arrange a conference in the heart of a coal mining area, comprised of representatives of the state and local medical societies concerned, the medical administrators of the U. M. W. A. Welfare and Retirement Fund, the state commissioners of health and deans of the state university medical colleges, for joint consideration of these problems and the working out of a course of action upon which all could agree, to be put into effect at each appropriate level."

The text of that radio statement was sent to the A. M. A. Council on Medical Service in a letter that Dr. Draper concluded by saying: "When I read in the papers and elsewhere some of the things that various labor people, the American Legion and the like are saying about the American Medical Association, it seems to me that our position and relationship are rather unique and possibly you might like to tell the world how *we* feel about it."

The American Medical Association is more than happy to tell the world about it, for the story reflects credit on all concerned. Labor leaders, labor union medical administrators, and physicians everywhere can learn valuable lessons from the way in which organized medicine and the United Mine Workers have sat down together to iron out a host of difficult problems.

THE WOMAN'S AUXILIARY

The Woman's Auxiliary to the American Medical Association was organized in 1922 to assist the American Medical Association in its program for the advancement of medicine and public health, to coordinate and advise concerning the activities of constituent auxiliaries, and to cultivate friendly relations and promote mutual understanding among physicians' families. Its membership consists primarily of the wives of physicians. Each year it adopts a slogan, and that for the 1954-1955 season is "Leadership in Community Health."

The program of the Woman's Auxiliary for its nearly 68,000 members this season will stress (1) greater familiarity with the various functions, departments, and services of the American Medical Association; (2) a family physician for every physician's family; (3) community health audits; (4) safety programs; (5) improvement of maternal and child care; (6) combating juvenile delinquency; (7) promotion of mental hygiene; (8) study of the problems of aging; (9) the need for nurse recruitment; (10) study of nutrition with special reference to overweight; (11) active participation in civil defense; and (12) support of legislation favorable to the freedom and dignity of the medical profession. Such a program augurs well for this organization, and we wish the Woman's Auxiliary every success. All wives of physicians should wish to play some part in furthering these laudable ends.

NATIONAL FUND FOR MEDICAL EDUCATION

The National Fund for Medical Education is to be congratulated on the recognition given it by Congress in the form of a federal charter. Our 80 medical schools are the keystones of national health, and their support is fundamental to the democratic tradition. A large part of this support has always come from gifts and bequests, and such funds are more necessary now than ever before because of the vast research programs currently being carried on in schools that originally limited their activities almost exclusively to teaching. The total cost of medical education cannot be passed on to medical students, because it would be prohibitive to all but a small handful of desirable applicants. The only other alternative would be governmental subsidy, and such a step not only would go against tradition but would lead to a bureaucratic control, which would eventually lower the hard-won standards we now enjoy.

If the nation's industries are to be expected to make voluntary contributions to this worthy cause it must be made plain to them that American medicine is assuming its share of the burden. This it is doing, as can be seen from the fact that of the more than 2 million dollars of disbursements to medical schools in July, 1954, the medical profession through the American Medical Education Foundation gave $1,101,578.31, or a little over half. If these two organizations, the NFME, and the AMEF, continue to supplement each other's efforts the standard of American medicine can be maintained on the high level we have come to expect.

ORGANIZATION SECTION

TENNESSEE STATE MEDICAL ASSOCIATION

To permit readers of THE JOURNAL *to become better acquainted with the activities of state medical associations, articles describing them will appear from time to time in these pages.* —ED.

On May 3, 1830, 47 physicians assembled in Nashville for the purpose of organizing the Medical Society of Tennessee. The population of the state totaled 681,904 persons, of whom 5,566 lived in the largest town, Nashville. The "Act to Incorporate a Medical Society in the State of Tennessee," which had become law on Jan. 9, provided that there should be appointed by resolution of the general assembly "a sufficient number of learned and intelligent practicing physicians" of the state who with their successors should constitute until 1860 "a body politic and corporate" under a name given in one section as the "Medical Society in the State of Tennessee" and in another as the "Medical Society of Tennessee," the name used by the society. The early society was required to elect seven persons from the three major divisions of the state to constitute a board of censors with power to examine candidates and issue, to those it deemed qualified, licenses to practice medicine and surgery in Tennessee. The society was empowered to prescribe the regulations under which the examinations were to be conducted, but no qualification was to be required of a candidate as a prerequisite for examination except that he "be twenty-one years of age, and of good moral character."

The first meeting of the Medical Society of Tennessee was held in Nashville, May 3-4, 1830. Dr. James Roane of Nashville was named as the first president. In the opinion of many of the men who had promoted the organization of the Medical Society of Tennessee, the chief purpose of such an association of physicians should be the regulation of the practice of medicine and the suppression of quackery. Greatly to their disappointment, the act of incorporation did not confer on the society the power to do this. Accordingly, at the 1831 meeting, a committee was appointed to petition the legislature for such amendments to the charter of the society as were deemed "necessary for its prosperity and perpetuity." In 1835 a committee was appointed to memorialize the legislature for such an alteration of the charter of the society as would permit it to establish auxiliary societies, one in east Tennessee and one in west Tennessee, and for such other "extension, alteration or amendment of the charter" as the committee might think "most conducive to obtain the ends for which it was originally granted." Among other actions taken by the society during its first decade was the adoption of a resolution "that it was disreputable and unbecoming and should be highly censurable by this society, for any member of it hereafter, to make annual engagements or specific contracts for his services with an individual or family." To stimulate study by its members the society at its 1831 meeting decided to offer a prize of $50 for the best essay presented by the next meeting on the "use and abuse of Calomel." Probably the greatest achievement of the society during the 40's was the establishment of an anatomic museum.

When a call was issued by the New York State Medical Society for a national medical convention to meet in New York City in May, 1846, the Medical Society of Tennessee pledged its support to the movement and at a called meeting, April 4, 1846, appointed a delegation of 12 members to attend the convention. After the organization of the American Medical Association, which followed in May, 1847, a "Medical Convention of the State of Tennessee" was held in Nashville, Oct. 25-26, to consider the recommendations of the national body. From 1850 on, delegates were appointed to attend the annual meetings of the American Medical Association, and those of 1851 were instructed to seek to persuade the national organization to petition Congress for the creation of a national board of health that should protect the public against the impositions of "patent and secret nostrums," by publishing the analyses of all secret compounds together with statements as to the effects of these on the human body and the market value of the ingredients therein.

In May, 1857, the American Medical Association, meeting in Nashville, elected Dr. Paul F. Eve of that city as President, and in subsequent years honored other Tennessee physicians with the same office: Dr. William K. Bowling served as President in 1875; Dr. William T. Briggs in 1891; Dr. John A. Witherspoon in 1913; Dr. William D. Haggard in 1925; and Dr. Harrison H. Shoulders in 1946. Drs. Eve, Briggs, and Bowling had come to Nashville when the medical department of the University of Nashville was established in 1851, and it was Dr. Bowling who established and for many years edited the *Nashville Journal of Medicine and Surgery*, which for a period of years served as the official journal of the state society.

The society in 1853 invited the physicians of the state to organize local societies. The Medical Society of Nashville had been formed in 1843. The Medical Society of East Tennessee had organized in 1845; the Rutherford County Medical Association in 1848; the Medical Society of Montgomery County was in existence in 1849; and the Memphis Medical Society

Headquarters of the Tennessee State Medical Association are located in the Doctors Building in Nashville.

was incorporated by the legislature in 1852. By 1860 there was great need for the infusing of new life into the Medical Society of Tennessee, now 30 years old. At the 1860 meeting not a paper was read and not a case reported. The society was almost dead, and the Civil War, which began a short time later, put an end to its activities for five years. From 1866 to 1876 the Medical Society of Tennessee struggled to regain its momentum. One of the principal actions during this period was to hold the annual meeting at some place other than in middle Tennessee. Previously, the meetings had been held in or at some town near Nashville. On April 7 and 8, 1874, the society met in Chattanooga.

The new constitution was adopted in 1876. In membership the society grew from 172 in 1876 to 311 in 1889. At the meeting in Knoxville in 1880, the first woman physician appeared. In 1878, the society met for the first time in west Tennessee, when it assembled in Memphis. From that day it has followed the custom of meeting periodically in each section of the state. "An Act to Regulate the Practice of Medicine and Surgery in Tennessee," approved in 1889, provided that there should be appointed by the governor a State Board of Medical Examiners to be composed of two physicians from each grand division of the state. Thus ended in 1889 what may be considered a distinct

period in the history of the organization that now bears the name of the Tennessee State Medical Association. The society since its reorganization had won from the legislature by dint of persistent effort two laws of great importance, the act of 1877 that established a board of health and the act of 1889 that established a board of medical examiners.

In 1902, at the annual meeting in Memphis, the society was reborn as the Tennessee State Medical Association. The judicial council reported a new constitution and a new set of bylaws; both were immediately adopted. The constitution and the bylaws of the Tennessee State Medical Association provided that the transformed state organization should be a federation of county medical societies that should hold charters from the state association. Provision was made for a council also, which was to be composed of all ex-presidents living within the state. This body was to consider "all questions involving the rights and standing of members," and all questions of ethics were to be referred to it. With the adoption of this new constitution in 1902, organized medicine in Tennessee entered on a period of new life. Under the new constitution, the Tennessee State Medical Association began a period of rapid growth. In June, 1908, the first number of the *Journal of the Tennessee State Medical Association* appeared, with Dr. George H. Price as editor.

In the course of 124 years since its first meeting, the asspciation has played a part in the state's history of which its members today may well be proud. It has warred against quackery and charlatanry; it has advocated measures for the establishment of tuberculosis hospitals, the medical inspection of school children, the establishment of an institution for feeble-minded children, and the raising of medical fees under the workman's compensation law. Among its projects in recent years, which have served as patterns for other state medical associations, is the Tennessee Medical Foundation, recently organized for the purpose of furnishing medical care to rural and isolated areas.

The state association now maintains headquarters in suite 319-325 of the Doctors Building, 706 Church St., Nashville. In 1953 the board of trustees was authorized to purchase property and make plans for the erection of a permanent headquarters building to house the offices of the Tennessee State Medical Association. This project is expected to get under way in 1955. The membership now totals 2,376. Officers for 1954 are Drs. John R. Thompson Jr., Jackson, president; Charles C. Trabue IV, Nashville, president-elect; S. Fred Strain, Memphis, J. Fred Terry, Cookeville, and Walter D. Hankins, Johnson City, vice-presidents; Rudolph H. Kampmeier, Nashville, secretary and editor of the journal. Mr. Jack E. Ballentine, Nashville, is executive secretary.

THIRD CONFERENCE ON MEDICAL CARE IN THE BITUMINOUS COAL MINE AREA

An encouraging story of closer cooperation and continued progress in improving medical care for coal miners was told by representatives of the medical profession and the United Mine Workers of America at the third Conference on Medical Care in the Bituminous Coal Mine Area, held Oct. 23-24 at the Hotel Prichard in Huntington, W. Va. Sponsored by the Committee on Medical Care for Industrial Workers of the Council on Medical Service and the Council on Industrial Health of the American Medical Association, the week-end conference was attended by more than 80 representatives of the A. M. A., the United Mine Workers Welfare and Retirement Fund, and the state medical societies of Kentucky, Pennsylvania, Tennessee, Virginia, and West Virginia.

The conference, stimulated by two reports from the Tennessee delegation, voted unanimously to commend the Tennessee State Medical Association for the public service program that it is carrying out through the Tennessee Medical Foundation to increase medical facilities and improve medical care in the Pruden Valley and other depressed areas of the state. Another conference highlight was the assurance from Dr. Warren F. Draper of Washington, D. C., executive medical officer of the U.M.W.A. Welfare and Retirement Fund, that the miners' medical care program will be conducted according to the accepted ethics and standards of the medical profession, including free choice of physicians and hospitals qualified to render the service that the individual patient requires and willing to conserve the resources of the paying agency by avoiding unnecessary hospitalization, undue length of stay, and unnecessary procedures. Dr. Draper and other U.M.W.A. representatives also told the conference that the 10 hospitals now under construction by the union will not be exclusively for the use of coal miners, but will be available to other members of the community when facilities are available, and will be staffed as far as possible by qualified specialists and general practitioners who already are located in the hospital areas. The annual conferences "have been of inestimable value to the U.M.W.A. Welfare Fund, and we are extremely proud of our good working relationships with the American Medical Association and the state medical societies," Dr. Draper declared. No other agency except the A. M. A. could bring about the liaison and joint consideration of problems that has taken place, he said, and the medical profession's active cooperation has enabled the U.M.W.A. program to make much better progress than could possibly have been accomplished otherwise.

Among the major problems emphasized at the conference were the need for increased coordinated effort to step up the recruitment of well-qualified physicians in the coal mine areas, to find ways and means of preventing unnecessary surgery and excessive use of hospital facilities, to develop even closer liaison between physicians and the U.M.W.A. on both state and local levels, to establish health educational programs for the miners, and to bring about a better integration of general practitioners in the U.M.W.A. medical program. Presenting the first of the reports by state delegations, Dr. Carl H. Fortune of Lexington, Ky., chairman of the Kentucky State Medical Association's advisory committee to the U.M.W.A., said that many physicians fear a system of monopolistic practice may grow up around the U.M.W.A. Memorial hospitals and their outpatient clinics. When policies for the hospitals are formulated, he urged, they should be given full publicity and should be presented to local medical societies as well as to the state liaison committees. Thorough airing of problems by physicians and fund representatives, Dr. Fortune added, "should avoid misunderstandings which are often more damaging than differences of opinion."

Dr. Edgar F. Meiser of Lancaster, Pa., chairman of the committee on medical economics of the Medical Society of the State of Pennsylvania, reported that the main problems in his state stemmed from the establishment of a U.M.W.A.-sponsored clinic group without the approval or knowledge of the county medical societies involved. To prevent such difficulties in the future, he outlined a standard plan for joint community action whenever a lay organization desires to establish a new medical facility or expand an existing one. Now is the time, Dr. Meiser concluded, to "shed our indifferences, put aside narrow self interests and work together in mutual trust and understanding." The Tennessee State Medical Association, in a statement by Dr. John R. Thompson Jr., president, of Jackson, reported definite progress in its over-all program, including recruitment and placement of physicians, specialist consultation to rural areas, integration with the state public health services, rural postgraduate education, care of the indigent, development of local prepaid medical care plans, and visits to communities for thorough discussion of problems with all interested parties. "Organized medicine can and should assume an active role in the medical affairs of local communities," Dr. Thompson declared, and in Tennessee "we have been trying to accentuate the positive by rendering public service, rather than by climbing on the soap box and screaming down somebody else's plans and promises."

Virginia needs at least 10 more physicians in its seven-county coal mine area, Dr. James P. Williams of Richlands, chairman of the U.M.W.A. liaison committee of the Medical Society of Virginia, told the conference, but present economic conditions have increased the difficulty of recruiting and keeping younger men. He reported continuing progress in raising the standards of hospital practice, and he said the state health department now is covering the last remaining coal county that had been without a public health unit. Dr. Williams also said that monthly seminars conducted by the state's two medical schools have been invigorating and helpful to physicians in the coal mine area. Dr. Ray M. Bobbitt of Huntington, chairman of the

West Virginia State Medical Association's U.M.W.A. advisory committee, outlined seven recommendations that he said had been agreed on by his committee and the U.M.W.A. area medical administrators: (1) a mechanism within the state society to prevent unnecessary surgery, abuse of hospital facilities, and excessive charges; (2) broadening of hospital staff privileges to include all qualified general practitioners; (3) establishment of active tissue and professional practice committees in all hospitals; (4) education of physicians in the problem of unnecessary hospital admissions and prolonged length of stay; (5) approval of the principles of group practice in adequate clinics; (6) reduction of the length of stay of fund patients in hospitals; and (7) a state society study with the objective of supporting and strengthening public health activities.

Dr. Asa Barnes of Louisville, Ky., U.M.W.A. medical administrator for an area including eastern Kentucky, reported that the stabilizing influence of payments for services to fund beneficiaries has enabled hospitals and the majority of physicians to maintain a fairly high income level. He expressed "deep gratitude for the conscientious service that a large majority of the physicians and surgeons of Kentucky and Indiana have provided for Fund patients during the past few years at a fair and just cost." Dr. Barnes added, however, that in some areas of Kentucky there is "a persistence of unnecessary and prolonged hospitalization and a high incidence of needless surgery which certainly cannot be justified according to the standards of the profession today." Despite the problems, he said, the past year has brought definite improvement and progress.

Five specific suggestions were offered by Dr. F. H. Arestad, former A. M. A. staff member who now is U.M.W.A. area medical administrator at Johnstown, Pa. They were: (1) use only those hospitals that can meet the standards and requirements of recognized accrediting agencies; (2) encourage the development of conscientious tissue and medical audit committees in all participating hospitals; (3) develop effective consultation services to evaluate the patient's needs in the early stages of hospitalization; (4) eliminate incompetent, uncooperative, and overcharging physicians from participation in the fund program, as a "benefit not only to the Fund and its beneficiaries, but also to organized medicine and the great majority of physicians who are cooperating wholeheartedly in this program"; and (5) give immediate consideration to the establishment of a comprehensive program of home, office, and hospital care. Dr. Leslie A. Falk, U.M.W.A. medical administrator for the Pittsburgh, Pa., area, said the two principal problems are medically unnecessary hospital days and shortages of physicians in some rural mining communities. He reported "splendid cooperation" with state and county medical societies in attempting to fill the needs for physicians, and he said that work with medical society liaison committees has especially advanced in the past year. Dr. Falk asked for even greater cooperation by medical societies "to improve the soundness, economy and quality of service provided through the Fund program in the Pittsburgh area."

The progress that has been made in obtaining better understanding between the medical profession and the area medical administrators is making for a sounder program, according to Dr. William Riheldaffer of Charleston, W. Va., U. M. W. A. area medical administrator. Mutual trust and confidence are replacing suspicion and antagonism, he said. Pointing out that one of the basic causes of unnecessary hospitalization is the lack of good quality home and office care in many coal mining areas, Dr. Riheldaffer declared that the development of prepaid diagnostic and treatment services for needy rural areas "must receive more study and consideration by everyone concerned with medical care in this country." Dr. John D. Winebrenner, U.M.W.A. area medical administrator in Knoxville, Tenn., told the conference, "The improvement and progress of medical care in the past five years in the area served by the Fund is so monumental that all of us are sometimes led to take it for granted. It is a forest we do not see for the trees. It is a testimony to the soundness of basic principles of the Fund and cooperation of the profession. We should not overlook these facts, that things of lasting value cannot be achieved overnight and that progress involves education, constructive criticism and deliberate change. While we may all suffer at times from jaded nerves and frustration, we can all congratulate each other for some very remarkable achievement during the past five years. The need continues that we keep right on helping one another."

Speaking at the conference luncheon, Dr. Elmer Hess of Erie, Pa., President-Elect of the A. M. A., urged effective disciplinary measures to help solve the problems of unnecessary surgery and unnecessary hospitalization. Dr. Hess also expressed the opinion that the annual conferences should continue "no matter how little is solved each time." Dr. Walter E. Vest of Huntington, W. Va., member of the U.M.W.A. medical advisory committee, declared that there must be mutual loyalty and teamwork between the medical staff and the governing body of a hospital. The hospital, he said, should be "a health beacon on a hill" for the entire community. Tissue, audit, and records committees or their equivalents are imperative, Dr. Vest asserted, and accreditation is an absolute necessity for the successful conduct of a hospital.

Reporting on the Tennessee program, Dr. B. M. Overholt of Knoxville, member of the Tennessee Medical Foundation's committee on health and medical care, said that the U.M.W.A. fund has been a significant force for the improvement of medical practice. "We assumed," he pointed out, "that the United Mine Workers of America were part of our medical responsibility and not a separate component and that medical care problems of the coal miners were the medical care problems of the people of Tennessee." Unless substantial and effective measures along this line are undertaken by organized medicine, Dr. Overholt declared, "we will have no shoulder on which to weep when someone else decides to do it for us." He emphasized, however, that the program of the Tennessee State Medical Association is dictated not by fear but "by prudence and obligation to the ethics of medicine to which we all must dedicate our lives." Dr. Frank J. Holroyd of Princeton, W. Va., member of the A. M. A. House of Delegates, reporting on a personal survey of 25 physicians in the Virginia and West Virginia coal mining areas, said that most physicians had no particular problem. He said the most frequent criticism of the fund from both specialists and general practitioners is the fact that the emphasis is primarily on hospitals and specialists. All physicians seem to agree, he reported, that there has been good cooperation between the fund administrators and the state and county medical societies. "Since this program offers free choice of physicians on such a wide scope," Dr. Holroyd said among his concluding suggestions, "it seems that every effort should be made to continue that free choice."

The conference, which voted unanimously at the closing session for a meeting again next year, was presided over by Dr. W. A. Sawyer of Rochester, N. Y., chairman of the A. M. A. Committee on Medical Care for Industrial Workers. Dr. Frederick W. Slobe of Chicago, member of the A. M. A. Committee, recapitulated the 1953 conference, and Dr. Edwin P. Jordan of Charlottesville, Va., another Committee member, gave the summary of the 1954 meeting. The other members of the Committee are Drs. Warren F. Draper, Washington, D. C.; Robert B. Homan, El Paso, Texas; W. Clark Bailey, Harlan, Ky.; Raymond F. Frech, Newton, Iowa; Leo Price, New York; and Donald A. Dukelow, consultant, Chicago.

SAFEGUARDING THE WORKER'S HEALTH

Building an effective health program for American industry, with the use of the facilities of medicine, government, management, and labor, will be emphasized at the 15th annual Congress on Industrial Health. Sponsored by the A. M. A.'s Council on Industrial Health, the congress will be held Jan. 25-26 at the Shoreham Hotel, Washington, D. C. Following the general theme of the conference, "Medicine in an Industrial Society," panel discussions will be presented on industrial health as a major component in community health; medical care plans; workmen's compensation and rehabilitation; and health in the atomic age, stressing the need for modern protective methods of safeguarding the worker's health. A session for medical society committee members will be held before the conference, Jan. 24, to consider problems of special interest to the medical profession.

MEDICAL NEWS

ARIZONA

Annual Cancer Seminar.—The third annual cancer seminar will be presented by the Arizona division of the American Cancer Society in association with the Arizona Medical Association at Paradise Inn, Phoenix, Jan. 13 to 15, 1955. The speakers will be Drs. Alexander Brunschwig, Charles S. Cameron, Victor F. Marshall, and George T. Pack, New York; Juan A. del Regato, Colorado Springs, Colo.; Louis Lichtenstein, Los Angeles; Averill Liebow, New Haven, Conn.; Reed M. Nesbit, Ann Arbor, Mich.; and Eugene P. Pendergrass, Philadelphia. Thursday at 3 p. m. there will be a symposium on the diagnosis and treatment of tumors of bone and Friday at 2 p. m., a symposium on the management of uterine cancer. Among the topics to be considered in other presentations are: "Gastric Ulcer or Gastric Cancer—the Physician's Dilemma"; "Premalignant Lesions of the Colon and Rectum—Their Diagnosis and Management"; "The Smoking Problem"; and "An Evaluation of Present-Day Treatment for Cancer of the Breast."

CALIFORNIA

Dr. Myrnie Gifford Retires from Health Post.—Dr. Myrnie A. Gifford, Bakersfield, has retired from the Kern County health department after 20 years as assistant health officer. She had previously served with the San Francisco health department in the division of social hygiene and the division of child hygiene and with the state department of public health as a pediatrician. *California's Health* states that one of the high points in her career was her discovery that coccidioidomycosis and "valley fever" were one and the same disease.

Personal.—Dr. Carl L. Mulfinger, former secretary of the Los Angeles County Medical Society, recently received an honorary degree of doctor of science from his alma mater, Allegheny College, Meadville, Pa.——Dr. Clinton H. Thienes, Pasadena, was cited recently by the National Society for Medical Research in recognition of his contributions to public health and welfare in helping to inform the public of the experimental method underlying the achievements of the biological sciences.

Symposium on Whiplash Injuries.—The Billig Clinic and George Pepperdine College offer a free two hour symposium, "Whiplash Injuries to the Cervical Spine and Associated Structures: Medical, Legal, and Safety Aspects," at the main auditorium of the college, 1121 W. 79th St., Los Angeles, Dec. 11, 10 a. m. After opening remarks by Hugh M. Tiner, Ph.D., president of the college, Dr. Harvey E. Billig Jr., professor of physical rehabilitation, will introduce the subject. Vice Admiral Ross T. McIntire (MC), U. S. N. (Ret.), will serve as moderator for the following symposium panel: Dr. James J. Morrow, North Hollywood; Dr. J. Sloan Berryman, Beverly Hills; and Dr. J. Myron Middleton, Dr. Lawrence K. Gundrum, Laurence E. Morehouse, Ph.D., Dr. John H. Schaefer, Dr. Harvey E. Billig Jr., and Mr. John H. Mathewson, Los Angeles.

CONNECTICUT

Country Fair Health Projects.—October 10 marked the termination of the 1954 country fair project sponsored by the Connecticut State Medical Society's committee on rural health and the woman's auxiliary, in cooperation with Connecticut Medical Service. Health exhibits were displayed at 15 fairs by committees of the local chapters of the auxiliary. Thousands of copies of health publications, ranging from first-aid charts to pamphlets on emergency medical call plans, modern drugs, voluntary health insurance, and how to select a family physician, were distributed to patrons of the fairs by committee members.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

DISTRICT OF COLUMBIA

Personal.—Dr. Edgar P. Copeland, who has been affiliated with Children's Hospital, Washington, D. C., for 50 years, has resigned as chief of the medical staff and will become chief of staff emeritus but will continue to be active on the staff. Dr. Hugh J. Davis, who has served as vice-chairman, has assumed the duties of the chief of the medical staff.——Dr. Edmund Barry, a life member of the Medical Society of the District of Columbia, who has practiced medicine in the District of Columbia since 1892, was remembered on his 90th birthday by the society with greetings and flowers.

New Alpha Omega Alpha Chapter.—The national medical honor society, Alpha Omega Alpha, on Oct. 15 established a chapter at George Washington University School of Medicine, Washington, D. C. Charter members include nine students; eight members of the June, 1954, graduating class; and five faculty members. Two other faculty members were accepted as honorary members. The charter for the newly organized Alpha chapter was presented by the society's national president, Dr. Walter L. Bierring, Des Moines, Iowa. The main speaker was Dr. James J. Waring, professor emeritus of medicine, University of Colorado School of Medicine, Denver, whose grandfather, Dr. James J. Waring, was dean of the George Washington University School of Medicine in the 1860's, when it was called Columbian College of Medicine.

Dr. Coblentz Receives Finsen Award.—William W. Coblentz, Ph.D., Washington, D. C., a member of the A. M. A. Council on Physical Medicine and Rehabilitation, has been awarded the Niels Finsen medal in recognition of his work in spectroscopy. The award was presented at the International Photobiological Congress at Amsterdam, Netherlands, Aug. 23. Dr. Coblentz's fundamental research in infrared spectroscopy laid the foundation for present-day methods for the analysis of large, complex organic molecules. Almost a half century ago, he made extensive investigations of previously unexplored regions of the infrared spectrum. The medical profession is indebted to Dr. Coblentz for his work in the field of ultraviolet and infrared radiations as applied to the practice of medicine. Several of his papers have been published in THE JOURNAL.

ILLINOIS

Dr. Galdston to Lecture at Downey.—Dr. Iago Galdston, New York, executive secretary, New York Academy of Medicine, will be the speaker Dec. 15 at the Veterans Administration Hospital, Building 2020 W., Downey, where "The Role of the Therapist in Psychotherapy" will be discussed at 10 a. m. followed by case presentation at 1 p. m. At 8 p. m. Dr. Galdston will discuss "Eros and Thanatos—Critique of the Freudian Death Wish" (sponsored conjointly with Illinois Psychiatric Society) at the auditorium, VA Research Hospital, Chicago.

Chicago

Pediatrics Chairman Appointed.—Dr. Benjamin M. Gasul, associate professor of pediatrics at the University of Illinois College of Medicine, has been appointed chairman of the department of pediatrics at Presbyterian Hospital, to succeed Dr. Heyworth N. Sanford. Dr. Gasul is director of the pediatric cardiophysiology department and attending pediatrician at Cook County Children's Hospital and professor of pediatrics at the Cook County Graduate School of Medicine.

New Chief of Thoracic Surgery.—Dr. Edward J. Beattie Jr., chief of thoracic surgery at Presbyterian Hospital since 1952, has been appointed chairman of the department of surgery, to succeed Dr. Edwin M. Miller. Dr. Beattie formerly served in Washington, D. C., as consultant in cardiovascular surgery at Mount Alto Veterans Administration Hospital; chief, thoracic surgery, Gallinger Municipal Hospital (now District of Columbia

General Hospital); and consultant in thoracic surgery at George Washington University School of Medicine and Walter Reed Army Hospital. His teaching appointments include Harvard Medical School, Boston; George Washington University School of Medicine; and the University of Illinois College of Medicine.

Meeting on Rheumatic Fever.—The joint meeting of the scientific section of the Chicago Heart Association and the Chicago Society of Internal Medicine, Dec. 13, 8 p. m., at the Drake Hotel, will be preceded by a fellowship hour at 6 p. m. and dinner at 6:30 (for reservations, $5 per plate, call Miss Margaret Maloney, RAndolph 6-7834). The following program will be presented:

Recognition of Rheumatic Fever and Rheumatic Heart Disease, Clayton J. Lundy, Chicago.
Principles and Objectives of Therapy in Rheumatic Fever and Rheumatic Carditis, Benedict F. Massell, Boston.
Results of Prophylaxis Therapy in Rheumatic Fever, Robert J. Glaser, St. Louis.

Meeting on Electromyography.—At the joint meeting of the Chicago Society of Physical Medicine and Rehabilitation and the Chicago Neurological Society at the headquarters of the latter, 116 S. Michigan Ave., Dec. 14, 8 p. m., electromyography will be considered in the following program:

Physiological Basis for the Electrical Activity of Muscle, Gilbert Ling, Ph.D.
General Aspects of Interpretation of Electromyograms, Yvo T. Oester.
Electrodiagnosis in Anterior Poliomyelitis, Alex J. Arieff and Norman B. Dobin.
Electromyogram in Relation to Diseases of Muscle, Arthur A. Rodriquez.

Physicians, other professional personnel, and their guests are welcome.

University-Tumor Institute Affiliation.—The Chicago Tumor Institute has become affiliated with the medical and biological research center of the University of Chicago. On Oct. 24 a reception was held to dedicate the radiation therapy floor in the center that perpetuates the name of the institute. At a luncheon at the Quadrangle Club Mr. Joseph N. Kallick, president of the Jennie Rubenstein Memorial Association, presented a check for $5,000, as the first gift to the university since the affiliation. The 800 guests inspected the radiation devices of the medical center, which comprise the area named for the Chicago Tumor Institute, and other sections in the university's program of cancer research, including the Nathan Goldblatt Memorial Hospital and the Argonne Cancer Research Hospital, which provides new radiation devices and methods used for research and treatment of cancer. The Chicago Tumor Institute was organized in 1937, largely through the efforts of the late Dr. Ludvig Hektoen, who, with Dr. Max Cutler, operated the institute as a diagnostic and radiotherapy center at Dearborn and Elm streets.

KANSAS

Prizes in the History of Medicine.—The Friends of the Library of the History of Medicine (University of Kansas Medical Center, Kansas City) announces that Dr. Don Carlos Guffey is again offering two prizes for the best papers on some topic relating to the history of medicine. The first prize is $100, the second $50. The papers are to be delivered to the Library of the History of Medicine by March 31, 1955. Competition is restricted to undergraduates of the University of Kansas School of Medicine.

Dr. Stoddard Goes to Georgia.—Dr. Leland Stoddard, assistant professor of pathology, University of Kansas School of Medicine, Kansas City, has been named chairman of the department of pathology, University of Georgia School of Medicine, Augusta. Dr. Stoddard was director of surgical pathology at Duke University School of Medicine, Durham, N. C., 1950-1952. During World War II he served as laboratory officer of the 124th Evacuation Hospital and as chief of laboratory service of the 74th General Hospital and of the 280th Station Hospital, with the Army in Germany.

LOUISIANA

Personal.—Dr. Patrick H. Hanley, instructor in the Tulane University of Louisiana School of Medicine, New Orleans, was awarded the Ohio Valley Proctology award for the best paper presented at the 53rd annual meeting of the American Proctologic Society at Los Angeles. Dr. Hanley received the award for his paper on surgical correction of anal deformities in babies at birth.——Dr. Robert A. Matthews, head of the department of neuropsychiatry, Louisiana State University School of Medicine, New Orleans, recently participated in a 30 day tour of the Far East as a consultant to the Surgeon General of the Army. The tour took him to military installations in Japan and Korea primarily. He also gave lectures in neuropsychiatry, conducted teaching seminars, and served as a consultant in problem cases. Dr. Matthews made a similar tour of the medical facilities in German cities last year.

Graffagnino Lectureship.—A lectureship, established in honor of the first professor of its department of obstetrics and gynecology, Dr. Peter Graffagnino of New Orleans, has been announced by the Louisiana State University School of Medicine. The first annual Peter Graffagnino lecture was given Oct. 27 by Dr. Edward A. Schumann, Philadelphia, a past president of the American Gynecological Society. Dr. Graffagnino, who has practiced medicine in New Orleans for almost 40 years, came to the university at the opening of its school of medicine. He was an assistant professor of obstetrics and gynecology at the Tulane University of Louisiana School of Medicine in New Orleans from 1924 to 1932, when he became chairman of the same department at the Louisiana State University School of Medicine. He served in the latter position continuously until he retired from the chairmanship in 1952. He is now a clinical professor of obstetrics and gynecology at the school of medicine.

Medical Tour to Europe.—The New Orleans Graduate Medical Assembly announces the 1955 postclinical tour to Europe, which will follow the 18th annual meeting of the New Orleans Graduate Medical Assembly, March 7 to 10, 1955. The group will leave New York on March 12 by Pan American World Airways. Medical programs, entertainment, and sightseeing tours have been arranged in Paris, France; Rome, Italy; Munich, Germany; Copenhagen, Denmark; Stockholm, Sweden; and London, England. The schedule is as follows: March 12—afternoon departure from New York, arriving in Paris March 13; March 17—Rome by morning flight from Paris; March 20—Florence by afternoon train from Rome; March 22—Venice by afternoon train from Florence; March 25—Munich, arriving by train in the morning; March 27—Copenhagen by afternoon flight, via Frankfort; March 31—Stockholm by afternoon flight; April 3—London by morning flight. Departure may be made on April 7 from London by Pan American World Airways, arriving at New York April 8, or by boat from Southampton on French Line S. S. Liberté, arriving at New York April 13. Information may be had by writing to the Secretary, New Orleans Graduate Medical Assembly, Room 103, 1430 Tulane Ave., New Orleans 12.

NEW YORK

Adam Miller Memorial Lecture.—On Nov. 5 the State University of New York College of Medicine in Brooklyn presented the Adam M. Miller memorial lecture by William F. Hamilton, Ph.D., professor of physiology at the Medical College of Georgia, Augusta, whose subject was "The Physiology of Congestive Failure." The lectureship was created in honor of the late Adam M. Miller, professor of anatomy, 1914-1935, and dean of the Long Island College of Medicine, 1921-1935.

Diabetes Series.—The Rochester Regional Diabetes Association is holding a series of four dinner meetings at the University Club. "History and Present Concepts of the Disturbances in Carbohydrate Metabolism in Diabetes" was presented at the first meeting by Elmer H. Stotz, Ph.D., professor of biochemistry, University of Rochester School of Medicine and Dentistry. On Dec. 16 Dr. Einar Lie will serve as moderator for a panel discussion, "What Is Adequate Regulation and How Does One Control Obesity in Diabetes?" Collaborators will be Drs. Bernard Watson, Clifton Springs, Charles B. F. Gibbs, Pincus Sobie, and William M. Witherspoon.

Conference on Occupational Chest Diseases.—A conference on silicosis and occupational chest diseases will be jointly sponsored by the McIntyre Research Foundation of Toronto, Canada, and the Saranac Laboratory of Saranac Lake, Feb. 7 to 9, 1955, in the Town Hall at Saranac Lake. The papers to be presented in the five full sessions will report on original work conducted or sponsored by either the foundation or the laboratory, which have been conducting research along parallel lines. In addition, papers will be presented by guest lecturers. Dr. Anthony J. Lanza, formerly director of the Institute on Industrial Medicine and now emeritus professor of industrial medicine at New York University–Bellevue Medical Center, has been named chairman of the conference and also of the scientific program committee. Communications on the conference should be addressed to Mr. Norman R. Sturgis Jr., Saranac Laboratory, Saranac Lake.

Course on Resuscitation of Newborn.—The fourth annual refresher course on resuscitation of the newborn will be given under the auspices of the child health and welfare committee of the Medical Society of the County of Kings, Feb. 14, 1955, at 8:30 p. m., in the auditorium of the "E" Building of Kings County Hospital, Clarkson and New York avenues, Brooklyn. Members of the medical profession are cordially invited, and all interns and residents in Brooklyn are expected to attend the course, which will be presented by Drs. Richard L. Day, professor of pediatrics; Peter Gruenwald, assistant professor of obstetrics and gynecology (pathology); and Merel H. Harmel, professor and executive officer, department of anesthesiology, State University of New York College of Medicine at New York City, Brooklyn. Dr. Henry Rascoff, attending pediatrician, Beth-El and Kingston Avenue hospitals, Brooklyn, will serve as moderator.

Prize Essays.—The Lucien Howe prize and the Merrit H. Cash prize will be open for competition at the next annual convention of the Medical Society of the State of New York, May 9 to 13, 1955, in Buffalo. The Lucien Howe prize of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York. The Merrit H. Cash prize of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York state. Essays must be typewritten, with the name of the prize for which the essay is submitted, and as the only means of identification of the author a motto or other device, and must be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer. All prize-winning essays become the property of the Medical Society of the State of New York. All essays must be presented not later than Feb. 1, 1955, to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 386 Fourth Ave., New York 16.

Associate Dean Appointed.—Dr. Frank M. Woolsey Jr., chief of medical services at the Albany Veterans Administration Hospital since 1951 and an associate professor of medicine at Albany Medical College, has been appointed associate dean and director of postgraduate medical education at the college. He will take over the duties formerly performed by Dr. Curtland C. Brown Jr., assistant dean of the Albany Medical College before his induction into the U. S. Navy in July as a medical officer, and will in addition be a full-time administrative assistant to Harold C. Wiggers, Ph.D., dean. Dr. Woolsey plans to complete a critical survey of the medical college's curriculum and to expand the postgraduate teaching program for area physicians in the 16 counties serviced by the Albany Medical Center. In addition to the college's program of postgraduate teaching days in various areas of specialization, two regular courses (surgical anatomy and electrocardiography) certified for credit with the Academy of General Practice will be offered next year. Dr. Woolsey was formerly affiliated with Washington University School of Medicine, St. Louis; Yale University School of Medicine, New Haven, Conn.; and Western Reserve University School of Medicine, Cleveland. He served as a medical officer in the U. S. Air Force, 1943-1946.

New York City

Fourth Harvey Lecture.—Dr. Andre Lwoff, head of the department of microbial physiology, Pasteur Institute, Paris, France, will deliver the fourth Harvey lecture of the 1954-1955 (50th anniversary) series at the New York Academy of Medicine Dec. 16. Dr. Lwoff will present "Control and Interrelations of Metabolic and Viral Diseases of Bacteria."

Enlarge Psychiatric Court Services.—The Board of Estimates of New York City recently voted an appropriation of $661,610 to enlarge probationary and psychiatric services in three city courts: the Court of Special Sessions, the Court of Domestic Relations, and the City Magistrates' Court. Of the total appropriation, $120,000 was designated to provide an additional $40,000 psychiatric unit in each of the three courts.

Society for Circulatory Diseases.—The New York Society for Circulatory Diseases will hold a symposium, "Graphic Methods in Congenital and Rheumatic Heart Disease," at 8:30 p. m., Dec. 14, in room 440 of the New York Academy of Medicine building. Dr. Samuel O. Sapin of the Congenital Cardiac Group, Mount Sinai Hospital, will present "An Analysis of the Electrocardiogram and Vectorcardiogram in Congenital Heart Disease." Dr. Alvin J. Gordon, assistant attending physician, Mount Sinai Hospital, will discuss "Left Atrial Pulmonary Capillary and Esophageal Balloon Pressure Pulses in Mitral Valve Disease." Members of the medical profession are invited to attend the meeting and participate in the discussion. Dr. Simon Dack will preside.

Hospital News.—Presbyterian Hospital at the Columbia–Presbyterian Medical Center has received an additional grant of $100,000 from the John A. Hartford Foundation to help to meet the cost of free care given to indigent patients in the wards and clinics, which in the past year has amounted to $3,500,000.—— Mr. Alvin J. Binkert, lecturer in hospital administration, Columbia University College of Physicians and Surgeons, has been appointed vice-president and general manager of the Presbyterian Hospital at the Columbia–Presbyterian Medical Center, succeeding the late John S. Parke, who died Aug. 13. Mr. Binkert came to the Presbyterian Hospital as comptroller in May, 1941. In his new position Mr. Binkert will be responsible for the administration of all the units at the Presbyterian Hospital, which, affiliated with Columbia University, includes the Babies Hospital, Harkness Pavilion, Institute of Ophthalmology, Mary Harkness Convalescent Home, Neurological Institute, New York Orthopaedic Dispensary and Hospital, Sloane Hospital for Women, Squier Urological Clinic, and Vanderbilt Clinic.

Cardiovascular Courses.—Refresher courses in cardiovascular disease are being offered to general practitioners at the New York University Post-Graduate Medical School and the Mount Sinai Hospital in New York under the fellowship program of the New York State Department of Health, the New York City Department of Health, and the Medical Society of the State of New York. The New York State Department of Health will provide about 90% of the total fee for these courses, but no state health department funds are available for living expense stipends. The courses, which started Nov. 29 with "Peripheral Vascular Diseases," will include: "Modern Concepts in the Etiology, Diagnosis, and Treatment of Heart Diseases," Jan. 10 to 14, 1955 (N. Y. U.); "Intensive Course in Elementary Electrocardiography," Jan. 17 to 22 (Mount Sinai); "Intensive Course in Advanced Electrocardiography," Jan. 24 to 29 (Mount Sinai); "Cardiovascular Diseases," Jan. 31 to Feb. 11 (Mount Sinai); "Auscultation of the Heart," Jan. 31 to Feb. 2 (N. Y. U.); and "Electrocardiography," March 28 to April 1 (N. Y. U.).

Theodore Klumpp Honored.—Former president Herbert Hoover has appointed Dr. Theodore G. Klumpp, a former secretary of the A. M. A. Council on Pharmacy and Chemistry, as chairman of the Task Force on Medical Services of the Hoover Commission on Organization of the Executive Branch of the Government. Dr. Klumpp, who has been a member of the task force from its beginning, was chief of the drug division, U. S. Food and Drug Administration, from 1936 to 1941. Just before assuming his present position, that of president of Winthrop-

Stearns, Inc., he was director of Drugs, Food and Physical Therapy, and in 1951 he was chairman of the Office of Defense Mobilization's Task Force on the Handicapped. Dr. Klumpp is president of the National Pharmaceutical Council, a vice-president of the American Drug Manufacturers' Association, and a past president of the American Pharmaceutical Manufacturers' Association. He is a director of the World Medical Association and a member of the advisory committee of the New York State Legislative Committee on Problems of the Aging.

OHIO

Civil Aeronautics Course.—The Ohio State University College of Medicine, Columbus, has been asked by the Civil Aeronautics Administration to repeat next year, on an enlarged scale, a post-graduate course in aviation medicine that it held Sept. 13 to 17 in cooperation with the CAA (THE JOURNAL, Sept. 11, 1954, page 183), in which 18 specialists conducted courses on the newest developments in medicine as they affect pilots and airline passengers.

Hospital News.—A new department of physical medicine and rehabilitation was formed Aug. 1 at the Hamilton County Home and Daniel Drake Memorial Hospital. The chief of services is Dr. Emily Hess, who recently completed her course of specialized study at New York University-Bellevue Medical Center under the direction of Dr. Howard A. Rusk. The present physical therapy department facilities and staff are to be expanded. A new and comprehensive department of occupational therapy has been established.

TEXAS

Postgraduate Courses.—A one day postgraduate program in clinical laboratory procedures will be given Dec. 15 at Corpus Christi by the clinical pathologists of the University of Texas Medical Branch, Galveston, which also offers a special post-graduate course in pediatrics at the Medical Branch, Jan. 12 to 14, 1955.

Grants for Cerebral Palsy.—A community-wide program to support and expand existing facilities for patients with cerebral palsy was recently approved by United Cerebral Palsy–Dallas County. Within one year, the Dallas affiliate raised $186,000, of which $89,300 has now been allocated as follows: $42,300 to the Dallas Cerebral Palsy Speech and Treatment Center, owned and operated by the Dallas County Society for Crippled Children, to improve and expand the speech program and to add a psychological consultant to the center; $20,000 to the Southwestern Medical School of the University of Texas, Dallas, and to Parkland Hospital to initiate a rehabilitation program for which the Dallas Poliomyelitis Institute has furnished the equipment ($5,000 to help defray the expenses of a medical specialist in cerebral palsy and $15,000 for personnel working with patients with cerebral palsy at Parkland Hospital as part of the new rehabilitation program); $8,000 to the Goodwill Industries of Dallas for one industry representative who will solicit subcontract work for the handicapped workers and an additional occupational therapist; $2,500 each to Children Incorporated and the Children's Development Center of Dallas to expand their facilities in caring for mentally retarded cerebral palsy patients; $6,000 to the Soroptimist Club to carry out a summer camping program for patients with cerebral palsy in the Dallas area; $3,000 to the sociology department of the Southern Methodist University, Dallas, for a survey of the number and needs of patients with cerebral palsy in Dallas, to be done in conjunction with the state-wide survey conducted by the University of Texas in Austin; and $5,000 to establish on the campus of the Southern Methodist University a summer workshop for graduate students in the field of speech correction for patients with cerebral palsy.

VERMONT

State Medical Election.—At the annual meeting of the Vermont State Medical Society, Dr. Howard J. Farmer, St. Johnsbury, was installed as president and Dr. W. Douglas Lindsay, Montpelier, was chosen president-elect; Dr. Philip H. Wheeler, Brattleboro, vice-president; Dr. James P. Hammond, Bennington, secretary; and Dr. David Marvin, Essex Junction, treasurer.

VIRGINIA

State Public Health Association.—The Virginia Public Health Association was organized at a meeting in Richmond, Sept. 9, to "assist in protecting and promoting public health in Virginia." Dr. Samuel D. Sturkie, Charlottesville, director, Charlottesville-Albemarle County Health Department, was elected president. It is planned that it shall become eligible for affiliation with the American Public Health Association.

Welburn Award.—John J. Anderson, administrator of Arlington (Va.) Hospital, recently received the first Welburn award from the Arlington County Medical Society. The award, established this year in honor of Dr. Williamson C. Welburn, a general practitioner in the county for more than 50 years, was presented to Mr. Anderson at the annual dinner-dance of the society at the Washington Golf and Country Club because of his "outstanding service in developing and enlarging Arlington Hospital during the past six years."

WEST VIRGINIA

Alumni Elections.—Dr. Charles E. Watkins, Oak Hill, a past president of the West Virginia State Medical Association, was elected president of the Alumni Association of the West Virginia University School of Medicine, Morgantown, during the annual meeting of the West Virginia State Medical Association. Dr. George F. Evans, Clarksburg, was named vice-president and Dr. Clark K. Sleeth, Morgantown, secretary-treasurer.

Typhoid Fever.—According to the Department of Health, Education, and Welfare, U. S. Public Health Service, Dr. Newman H. Dyer of the West Virginia Department of Health has reported an outbreak of typhoid fever involving six persons in two families. Investigation disclosed that the families consumed raw milk from the same cows. Stool specimens from a young woman who resided with one of the families and had the responsibility of handling all milk showed the organisms of typhoid fever, although she had no history of having had typhoid fever.

Personal.—Dr. Clark K. Sleeth, Morgantown, has been appointed part-time health officer for Monongalia County to succeed Dr. Roger A. Kennedy, who resigned to become health officer for the city of Ottawa, Canada.——At a meeting of the state board of health, Dr. Bruce H. Pollock, Huntington, was approved as head of the Huntington-Cabell County Health Department; Dr. Ellis S. Frame, Webster Springs, as part-time health officer for Webster County; Dr. Charles J. Sites, Franklin, as part-time Pendleton County health officer; and Dr. George W. West, St. Marys, as municipal health officer.——Dr. William P. Black, Charleston, has been elected chairman of the Kanawha-Charleston board of health to succeed Mr. Hawthorne D. Battle, resigned. Dr. Black, a member of the Kanawha Medical Society since 1915, served as president in 1932. He has also served as Kanawha county coroner.——Dr. Ward Wylie, head of the Wyoming General Hospital in Mullens, has been elected vice-president of the National Boxing Association, of which he has been chief medical advisor for the past three years. Dr. Wylie, who has been secretary of the West Virginia Boxing Commission since 1934, is now serving his fifth term as a member of the West Virginia Senate from the ninth senatorial district,

WYOMING

Whedon Cancer Foundation.—Establishment of the Earl and Bessie Whedon Cancer Detection Foundation was announced by Dr. Earl Whedon at the dedicatory ceremonies for the new Sheridan County Memorial Hospital. The foundation will work in close association with the new hospital, but the foundation will be located at 30 Scott St. in downtown Sheridan. The foundation has purchased two houses, one to serve as the foundation office, the other to house a laboratory. Cancer detection services will be offered gratis to all medically indigent persons. Dr. and Mrs. Whedon are said to have endowed the foundation with almost all of their lifetime savings so that the income will be sufficient to operate the detection center. Dr. Whedon, a past president of the Wyoming State Medical Society, served for 18 years as its secretary and for most of those years was Wyoming editor of the *Rocky Mountain Medical Journal*. In addition to

long service in offices of local and state medical organizations, he was for 15 years chairman of the Wyoming division of the American Cancer Society and has served many years on the state board of health.

GENERAL

Endocrine Society Invites Papers.—The 37th annual meeting of the Endocrine Society will be held in the Chalfonte-Haddon Hall Hotel, Atlantic City, N. J., June 2 to 4, 1955. Those wishing to present papers (time limited to 10 minutes) should send four copies of the title and abstract (not exceeding 200 words, or equivalent space, exclusive of title) to Dr. Edwin B. Astwood, 30 Bennet St., Boston 11, not later than Feb. 1, 1955.

Warning: Printing Salesman.—Attention is called to the activities of a person who calls himself J. F. Stewart and who has given as his business address the J. F. Stewart Printing Company, 1309 13th St., N. W., Washington, D. C. He is reported to be victimizing dentists, physicians, and hospitals by acceptance of advance payment on printing orders to be delivered at later dates. The man is described as being from 50 to 58 years of age; height, 5 ft., 8 in.; weight, about 150 to 160 lb.; hair, gray mixed with brown, thinning on top. He is reported to have prominent central incisors. This man is said to have failed to deliver the mentioned printing orders.

Hand Talking Chart.—The hand talking chart for aphasic patients developed by Dr. Hamilton Cameron, New York, for his own use after he was stricken by coronary thrombosis, followed by cerebral embolism, which resulted in complete aphasia, is being distributed by him as a philanthropic contribution for use by afflicted persons. The chart consists of 20 hand signs that, requiring the use of only one hand, enable persons affected by complete aphasia, accident victims, and hospitalized aphasic veterans to communicate with those around them. Copies of the hand talking chart may be obtained from Dr. Cameron, 601 W. 110th St., Suite 3LL, New York 25.

Christmas Campaign of Epilepsy League.—The National Epilepsy League, Inc., 130 N. Wells St., Chicago 6, is conducting its Little Christmas Town campaign throughout the country. "Little Christmas Town" is a pre-Christmas folding card picturing a storybook town in a winter wonderland setting on Christmas eve. Little doors and windows, to be opened outward, disclose old country customs and happenings in "Little Christmas Town's" holiday preparations and celebration. In sponsoring the sale of the card for one dollar (plus 15 cents mailing cost), the National Epilepsy League and organized local and state groups are raising money to further the fight against epilepsy, which affects an estimated 800,000 persons in the United States.

Meeting of Radiological Society.—The Radiological Society of North America, Inc., held its 40th annual meeting at the Biltmore Hotel, Los Angeles, Dec. 6 to 11, under the presidency of Dr. Eugene P. Pendergrass, Philadelphia. Dr. Earl R. Miller, San Francisco, served as moderator for a symposium in cineradiography. The Carmen lecture, "Roentgen Examination of the Acute Abdomen," was presented by Dr. Barton R. Young, Philadelphia. Numerous invited speakers participated in the 70 presentations, which included discussions of fires and explosions in anesthesia, radiation protection measures in a university, radiation hazard control in hospitals, radiation hazards associated with particle accelerators, and a 10 year review of radiation protection in the atomic energy industry.

Pediatric Residency Fellowships.—The American Academy of Pediatrics will grant 12 or more fellowships for pediatric residents for a period of six months to one year. These fellowships have been created to enable young physicians in financial need to complete their pediatric training. The fellowships carry a stipend of $500 to $1,000, depending on the need and length of time required to complete training. The fellowships, made possible by a grant to the academy from Mead Johnson & Company, will be granted as of July 1, 1955. The deadline for receipt of applications will be March 1, 1955. Further information may be obtained from Dr. Harry A. Towsley, University Hospital, Department of Pediatrics, Ann Arbor, Mich., or the American Academy of Pediatrics, 610 Church St., Evanston, Ill.

New Editors Appointed.—Dr. William D. Robinson, professor of medicine at the University of Michigan Medical School, Ann Arbor, has been appointed editor of the *Journal of Laboratory and Clinical Medicine*, the official organ of the Central Society for Clinical Research, and Dr. William H. Beierwaltes, associate professor of medicine, has been named associate editor. They will assume their duties Jan. 1, 1955, replacing Dr. Clayton G. Loosli, professor of medicine, University of Chicago School of Medicine, who has held the editorship for the past six years, and Dr. Robert H. Ebert, associate professor of medicine, who has been associate editor for the past year and a half. After Jan. 1 manuscripts submitted for possible publication in the *Journal of Laboratory and Clinical Medicine* should be sent to Dr. Robinson.

Iodine Research Award.—The American Pharmaceutical Association invites nominations for the 1955 Chilean Iodine Educational Bureau award, which will be presented at the convention of the American Pharmaceutical Association in Miami Beach, Fla., during the week of May 1, 1955. Any member of the American Pharmaceutical Association may propose a nominee by submitting eight copies of each of the publications to be considered in the competition and a biographical sketch of the nominee, including date of birth and a list of publications. Nominees must be residents of the United States or Canada and must have done outstanding research work in the chemistry or pharmacology of iodine and its compounds as applied in pharmacy or medicine. The award consists of $1,000 and a diploma setting forth the reasons for the selection of the recipient. Nominations should be addressed to Robert P. Fischelis, Ph.G., Secretary, American Pharmaceutical Association, 2215 Constitution Ave., N. W., Washington 7, D. C., and must be received on or before Jan. 1, 1955.

Planned Parenthood Medical Advisory Council.—The Planned Parenthood Federation of America has named as head of its newly reactivated National Medical Advisory Council Dr. Haven Emerson, professor emeritus of public health practice at Columbia University College of Physicians and Surgeons, New York. The council, which will advise the federation on matters of broad policy, will work closely with the federation's medical committee in planning long-term programs for the national organization and its 112 affiliated committees in 29 states, which operate clinics providing birth control services and treatment for childless couples. The council will be composed of the following members: Dr. Donald B. Armstrong, Scarborough, N. Y.; Dr. Lovett Dewees, Glen Mills, Pa.; Drs. R. Gordon Douglas, Currier McEwen, Wilson G. Smillie, William E. Studdiford, and Howard C. Taylor Jr., New York; Drs. Nicholson J. Eastman and Ernest L. Stebbins, Baltimore; Dr. John Gordon, Boston; Dr. John Rock, Brookline, Mass.; Dr. Stafford L. Warren, Los Angeles; and Charles E. A. Winslow, D.P.H., New Haven, Conn.

Christmas Safety Campaign.—The National Safety Council, 425 N. Michigan Ave., Chicago 11, calls attention to the Christmas Safety Campaign, with special reference to Dec. 15 as "S-D Day" or "Safe Driving Day," so designated by the President's Action Committee for Traffic Safety. The purpose of the day will be to show that motorists and pedestrians can reduce traffic accidents by their own actions and to demonstrate that the community is the place to attack the traffic safety problem. An all-out national effort will be made to hold traffic accidents to a minimum. The appeal of the Christmas safety campaign is, "For a merrier Christmas, drive with reason during the holiday season." The following tips for holiday driving are offered by the council: 1. Respect the weather. Adjust your speed to road and weather conditions. 2. Keep windshield clear, and use tire chains for severe snow and ice conditions. 3. Brake intermittently—don't lock the wheels—when the road surface is slippery. 4. Follow other vehicles at a safe distance. 5. Allow plenty of time to make your trip without hurrying. 6. By all means, don't drive after drinking.

Elizabeth Prentiss Award.—At the annual meeting in New York, the Cleveland Health Museum's Elizabeth Severance Prentiss National Award in Health Education was bestowed on Ira

Vaughan Hiscock, Sc.D., chairman of public health at Yale University, New Haven, Conn., educator, sanitarian, consultant, community surveyor, and author of "Community Health Organization." Dr. Hiscock served as a bacteriologist for the Connecticut Department of Health in 1914 and has since been head of such agencies as the National Health Council, National Tuberculosis Association, Connecticut Tuberculosis Association, Connecticut Public Health Association, Connecticut Society for Mental Hygiene, Connecticut State Public Health League, New Haven Board of Health, and New Haven Council of Social Agencies. He joined the Yale faculty 34 years ago as an instructor, was appointed Lauder professor of public health in 1931, and has been chairman of the department since 1945. He also lectures in public health at Columbia University, the University of Southern California, and the University of California. Dr. Hiscock currently is a member of the World Health Organization's health administration committee and during World War II, in which he served as a U. S. Army colonel, was chief of public health in the civil affairs division of the War Department.

Premedical Education Conference.—A conference on premedical and predental education will be sponsored by Alpha Epsilon Delta, national premedical honor society, in cooperation with the American Association for the Advancement of Science (sections C–Chemistry, F–Zoological Sciences, N–Medical Sciences, and Nd-Dentistry) and Sigma Pi Sigma, national physics honor society, at the meeting of the American Association for the Advancement of Science in Berkeley, Calif., Dec. 30. The morning session (Wheeler Hall, Room 11, University of California) will consist of a symposium that will include a review of the report "Preparation for Medical Education in the Liberal Arts College" by the subcommittee on preprofessional education of the Survey of Medical Education (New York, McGraw-Hill Book Company, Inc., 1953). After this presentation, Dr. John Z. Bowers, dean, University of Utah School of Medicine, Salt Lake City, will have as his subject "The Medical Educator Considers Premedical Education." The luncheon address, "Methods of Improving Liaison and Cooperation Between the Medical and the Liberal Arts Colleges in the Western States," will be delivered by Dr. Francis R. Manlove, director, University of Colorado Medical Center, Denver. Round-table discussion of the report, 2 p. m., will consider (1) preprofessional education and curriculum and (2) improving the advisory program and liaison between medical, dental, and liberal arts colleges. A summary session on trends and outlooks will be held at 4:30 p. m.

Oak Ridge Research Participation.—University faculty members are invited to apply for places in the Oak Ridge Research Participation Program carried out by the Oak Ridge (Tenn.) National Laboratory and Oak Ridge Institute of Nuclear Studies. Through this program, faculty members may conduct research in Oak Ridge for periods of three months to a year. Oak Ridge National Laboratory is the principal center of research, although limited opportunities for participation also exist at the University of Tennessee–Atomic Energy Commission Agricultural Research Program and the medical and special training divisions of the institute. Oak Ridge National Laboratory offers opportunities for fundamental and applied research in physics, chemistry, metallurgy, biology, mathematics, and engineering, with a number of nuclear reactors and particle accelerators as the principal research instruments. The U. T.–AEC program is concerned with the internal and external effects of radiation on farm animals. The institute's medical division conducts extensive studies of the internal and external uses of radioisotopes in cancer treatment and studies in radiation physics. The institute's special training division affords opportunities for research in instrumentation, radioisotope applications, and the occurrence of radioactivity in ores and sea water. Payment while a person is on leave for research participation approximates his university salary. Application should be made six months in advance of the time when the applicant would expect to begin his Oak Ridge research. Information may be obtained from the University Relations Division, Oak Ridge Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tenn.

Trudeau Fellowships.—The National Tuberculosis Association, through the American Trudeau Society, is offering a number of resident fellowships to promote the training of clinicians, medical teachers, and administrators in the field of tuberculosis and related pulmonary diseases. Awards are open to citizens of the United States for work within this country. Candidates should hold the degree of doctor of medicine. Preference will be given to those not more than 30 years of age. Awards are made for graduate study in internal medicine, with emphasis on diseases of the chest, in an approved hospital. The American Board of Internal Medicine will accept one such year as part of the prerequisite training for certification in internal medicine and in pulmonary diseases. All awards are determined by individual circumstances and are paid directly to the fellow on a monthly basis. Fellowships are granted for one year. Not more than two renewals will be considered. Fellowship applications must be received by Feb. 1. Appointments may begin on any date at the convenience of the applicant, who may elect the hospital in which he wishes to study and the staff member who will supervise his work.

A few Trudeau fellowships at a higher level of training and award are offered to specially qualified candidates who have been assured of a continued teaching appointment on completion of training. Trudeau fellowships, awarded for one year, may be renewed up to a total of four years. Further particulars concerning resident and Trudeau fellowships may be obtained from the Director of Medical Education, American Trudeau Society, % the Henry Phipps Institute, Seventh and Lombard Streets, Philadelphia 47.

Congress on Obstetrics and Gynecology.—The sixth American Congress on Obstetrics and Gynecology will be held at the Palmer House, Chicago, Dec. 13 to 17, under the sponsorship of the American Committee on Maternal Welfare, Inc. (Dr. Frederick H. Falls, Chicago, president) and the American Academy of Obstetrics and Gynecology (Dr. F. Bayard Carter, Durham, N. C., president). The program, designed for physicians, nurses, public health officials, and hospital administrators concerned with mother and infant care, will include about 30 formal papers, 22 symposiums and panels, luncheon discussion groups, and round-table discussions. Among the panel topics will be "Indications for Hysterectomy," "Factors Determining Type of Cesarean Section," "Function of Personnel and Standards of Procedure in the Delivery Room," "Management of Prolonged Labor," "Blood Transfusions," "Preparation for Parenthood," "Consultation in Obstetrics," "Community Aspects of the Care of the Cancer Patient," "Obstetric Anesthesia," "Selection, Training, and Function of Obstetric Personnel," "Perinatal Mortality," "Organization and Operation of Maternal Mortality Committees," "Lesions to Be Considered in the Differential Diagnosis of Carcinoma of the Cervix," "Carcinoma of the Cervix," "Toxemias of Pregnancy," "Obstetric Hemorrhage," and "Prenatal Care." Symposium subjects will include "Medical Complications of Pregnancy," "Accreditation of Hospitals and Residencies," "Basic and Graduate Education and Training of Obstetric Nurses and Supervisors," "Premarital Examinations and Counselling," and "Prevention and Management of Prematurity." Dr. William F. Mengert, Dallas, Texas, will be installed as president of the academy on Thursday afternoon.

Society News.—At the annual meeting of the **Mid-Continent Psychiatric Association,** Dr. Paul S. Hines, Kansas City, Mo., was elected president; Dr. Harold W. Sterling, North Little Rock, Ark., vice-president and president-elect; and Dr. Frank F. Merker, Topeka, Kan., secretary-treasurer.——Mr. Philip A. Conrath, associate professor and director of the section of medical illustration, St. Louis University School of Medicine, was elected president of the **Association of Medical Illustrators** at its recent annual meeting in Nashville, Tenn. The next annual meeting of the association will be held in New York.——At the annual business meeting of the **Southern Society of Cancer Cytology** the following officers were elected: Dr. H. Hudnall Ware, Richmond, Va., president; Dr. J. Ernest Ayre, Miami, Fla., president-elect; Dr. Cyrus C. Erickson, Memphis, Tenn., first vice-president; Dr. Lois I. Platt, Washington, D. C., second vice-president; Dr. J. Ernest Ayre, secretary; and Joseph K. Cline, Ph.D., Birmingham, Ala., treasurer.——The **Valley of**

Virginia Urological Association was recently organized at a meeting held in Staunton, Va., by a group of urologists from Virginia and West Virginia. Charter members include Drs. Thomas B. Baer and Edgar W. Kirby Jr., Bluefield, W. Va.; Dr. Jacob G. Warden, Hagerstown, Md.; and the following Virginians: Drs. Richard H. Lowe Jr., Roanoke; E. Christopher Stuart Jr., Winchester; Frank N. Buck Jr., Lynchburg; Sam D. Graham, Staunton; and Cyril I. Sease Jr., Harrisonburg.——At its annual meeting in New York, Oct. 8 and 9, the **Academy of Psychosomatic Medicine** voted to extend the present incumbents in office for an additional year: president, Dr. William Kaufman, Bridgeport, Conn.; vice-president, Dr. Bernard B. Raginsky, Montreal, Canada; secretary, Dr. Ethan Allan Brown, Boston; treasurer, Dr. Alfred J. Cantor, Flushing, N. Y.; and historian, Dr. Robert S. Drews, Detroit. The second annual meeting will be held again at the Hotel Plaza, Oct. 6 to 8, 1955, when the general subject will be "The Psychosomatic Aspects of Drug Administration." Those who wish to present papers are invited to communicate with the program chairman, Dr. Ethan Allan Brown, Boston, from whom applications for fellowship and a copy of the constitution may also be obtained. The third annual meeting is planned for the Edgewater Beach Hotel, Chicago, in October, 1956. The program chairman will be Dr. William Kaufman, and the subject tentatively chosen is "The Psychosomatic Aspects of Endocrine Disorders."——Mr. F. R. C. Brown, Houston, was recently named president of the **National Muscular Dystrophy Research Foundation, Inc.** The foundation announces an additional grant of $1,500 from the research fund to the Southwest Foundation for Research and Education at San Antonio, to supplement its grants totaling $5,000 to the San Antonio foundation toward a $30,000 medical research project entitled "Individual Metabolic Patterns for Members of Families Having a History of Muscular Dystrophy." The head of the foundation's medical advisory board is Dr. Henry R. Viets, Boston, and the chairman of the research advisory board is Dr. Derek E. Denny-Brown, James Jackson Putnam professor of neurology at Harvard Medical School, Boston. Mrs. Dwight D. Eisenhower is honorary foundation president. Sponsors are Price Daniel, junior United States senator from Texas; Gov. Allan Shivers; and Mr. and Mrs. Roy Rogers of screen, radio, and TV fame.

LATIN AMERICA

Inter-American Surgical Session.—The third inter-American session of the American College of Surgeons will convene in Lima, Peru, Jan. 11 to 14, 1955, at the Universidad Mayor de San Marcos de Lima. The program for Wednesday and Thursday will include symposiums on trauma, cancer, and tuberculosis. Among the participants from the United States will be Drs. Herbert Conway, New York; Paul C. Samson, Oakland, Calif.; William F. Rienhoff Jr., Baltimore; Craig Wright Muckle, Philadelphia; and B. Marden Black, Rochester, Minn. Dr. Alton Ochsner, New Orleans, will speak on a subject to be announced. "Treatment of Acute Gastroduodenal Perforation by Primary Gastric Resection" will be presented by Dr. Michael E. DeBakey, Houston, Texas, and "The Cytologic Demonstration of Tumor Cells Within the Mesenteric Venous Blood in Patients with Colorectal Carcinoma—Indications for Preliminary Venous Ligation" by Dr. Rupert B. Turnbull, Cleveland. A joint meeting of the Faculty of Medicine and Peruvian Academy of Surgery will be held in honor of the third inter-American session. Addresses will be delivered by Prof. Oswaldo Hercelles, dean, faculty of medicine; Dr. Alfred Blalock, Baltimore, president of the college; and Oscar Guzman del Villar, Lima, governor of the college.

FOREIGN

Swiss Course in Tropical Medicine.—The next course in tropical medicine at the Swiss Tropical Institute in Basle will be held from Jan. 10 to March 25, 1955. The lectures, given in German and French, are intended for physicians, veterinary surgeons, biologists, and students of medicine and veterinary science who wish to practice in the tropics. Further information on this course can be obtained from the Secretary, Swiss Tropical Institute, 57 Socinstrasse, Basle, Switzerland.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Annual Meeting, Atlantic City, N. J., June 6-10.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

ANNUAL CONGRESS ON INDUSTRIAL HEALTH, Hotel Shoreham, Washington, D. C., Jan. 24-26. Dr. Carl M. Peterson, 535 North Dearborn St., Chicago 10, Secretary.

AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY, Palmer House, Dec. 14. Dr. Paul Hodgkinson, 116 South Michigan Ave., Chicago 3, Secretary.

AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS, Hotel Statler, Los Angeles, Jan. 29-Feb. 3. Dr. J. R. Norcross, 122 S. Michigan Blvd., Chicago 3, Secretary.

AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY, Palmer House, Dec. 13-17. Dr. R. Gordon Douglas, 116 South Michigan Ave., Chicago 3, General Chairman.

EASTERN SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, Hotel Warwick, Philadelphia, Jan. 7. Dr. Benjamin H. Shuster, 1824 Pine St., Philadelphia 3, Chairman.

GERONTOLOGICAL SOCIETY, University of Florida, Gainesville, Fla., Dec. 28-30. Dr. Nathan W. Shock, Baltimore City Hospitals, Baltimore 24, Secretary.

INTERNATIONAL POST-GRADUATE MEDICAL ASSEMBLY OF SOUTHWEST TEXAS, San Antonio, Texas, Jan. 24-26. Dr. John M. Smith Jr., P.O. Box 2445, San Antonio 6, Texas, Secretary.

MIDDLE SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, Sheraton-Cadillac Hotel, Detroit, Jan. 24. Dr. James E. Croushore, 3001 West Grand Blvd., Detroit 2, Chairman.

SECTIONAL MEETINGS, AMERICAN COLLEGE OF SURGEONS:
Texas, Galveston, Buccaneer and Galvez Hotels, Jan. 17-19. Dr. Robert M. Moore, 900 Strand Street, Galveston, Chairman.

SOUTHERN SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, Medical School Auditorium, Charlottesville, Va., Jan. 24. Dr. G. Slaughter Fitz-Hugh, 104 East Market St., Charlottesville, Va., Chairman.

WESTERN SECTION, AMERICAN FEDERATION FOR CLINICAL RESEARCH, Carmel, Calif., Jan. 27. Dr. Arthur B. French, University of Utah College of Medicine, Salt Lake City, Secretary.

WESTERN SECTION, AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, The Town House, Los Angeles, Jan. 15-16. Dr. Victor Goodhill, 2007 Wilshire Blvd., Los Angeles 57, Vice President.

WESTERN SOCIETY FOR CLINICAL RESEARCH, Carmel, Calif., Jan. 28-29. Dr. Herbert N. Hultgren, Stanford Hospital, San Francisco 15, Secretary.

FOREIGN AND INTERNATIONAL

BRITISH MEDICAL ASSOCIATION, Representative Meeting, London, England, June 1-4, 1955. Dr. A. Macrae, B.M.A. House, Tavistock Square, London, W.C.1, England, Secretary.

CANADIAN AND BRITISH MEDICAL ASSOCIATIONS. Joint Meeting, Toronto, Canada, June 20-22, 1955. Dr. Arthur D. Kelly, 244 St. George St., Toronto, Canada, General Secretary.

COMMONWEALTH HEALTH AND TUBERCULOSIS CONFERENCE, Royal Festival Hall, London, England, June 21-25, 1955. Mr. J. H. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1, England, Secretary General.

CONGRESS OF INTERNATIONAL ASSOCIATION OF APPLIED PSYCHOLOGY, London, England, July 18-23, 1955. Dr. C. B. Frisby, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England, President.

CONGRESS OF INTERNATIONAL ASSOCIATION OF PSYCHOTECHNOLOGY, London, England, July 18-23, 1955. For information write: Dr. C. B. Frisby, Director, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England.

CONGRESS OF THE INTERNATIONAL ASSOCIATION FOR THE STUDY OF THE BRONCHI, Stockholm, Sweden, June 18-19, 1955. For information write: Dr. J. M. Lemoine, 187 boulevard St. Germain, Paris 7e, France.

CONGRESS OF INTERNATIONAL DIABETES FEDERATION, Cambridge, England, July 4-8, 1955. Mr. James G. L. Jackson, 152 Harley St., London, W.1, England, Executive Secretary General.

CONGRESS OF INTERNATIONAL SOCIETY OF SURGERY, Copenhagen, Denmark, July 23-29, 1955. Dr. L. Dejardin, 141, rue Belliard, Brussels, Belgium, General Secretary.

EUROPEAN CONGRESS ON RHEUMATISM, Scheveningen, The Hague, Netherlands, June 13-17, 1955. Dr. H. van Swaay, Pieter Bothstraat 12, The Hague, Netherlands, Secretary.

HEALTH CONGRESS OF THE ROYAL SANITARY INSTITUTE, Bournemouth, England, April 26-29, 1955. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1, England, Secretary.

INTER-AMERICAN CONGRESS OF RADIOLOGY, Shoreham Hotel, Washington, D. C., U. S. A., April 24-29, 1955. Dr. Eugene P. Pendergrass, 3400 Spruce St., Philadelphia 4, Pa., U. S. A., Secretary-General.

INTER-AMERICAN SESSION, AMERICAN COLLEGE OF SURGEONS, Universidad Mayor de San Marcos de Lima, Lima, Peru, S. A., Jan. 11-14, 1955. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

INTERNATIONAL ANATOMICAL CONGRESS, Paris, France, July 25-30, 1955. Prof. Gaston Cordier, 45, rue des Saints-Pères, Paris 6e, France, Secretary-General.

INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, Washington, D. C., U.S.A., Oct. 24-27, 1955. For information write: Dr. William Friend, 515 Nome Avenue, Akron 20, Ohio, U.S.A.

INTERNATIONAL CONGRESS OF ALLERGOLOGY, Rio de Janeiro, Brazil, S. A., Nov. 6-12, 1955. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7e, France, Secretary General.

INTERNATIONAL CONGRESS OF ANGIOLOGY AND HISTOPATHOLOGY, Fribourg, Switzerland, Sept. 2—, 1955. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8e, France.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Brussels, Belgium, Aug. 1-6, 1955. Prof. C. Liebecq, 17 Place Delcour, Liège, Belgium, Secretary-General.

INTERNATIONAL CONGRESS OF COMPARATIVE PATHOLOGY, Lausanne, Switzerland, May 26-31, 1955. Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary-General.

INTERNATIONAL CONGRESS OF CRIMINOLOGY, London, England, Sept. 11-18, 1955. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

INTERNATIONAL CONGRESS OF PLASTIC SURGERY, Stockholm, Sweden, Aug. 1-4, 1955, and Uppsala, Sweden, Aug. 5, 1955. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

INTERNATIONAL CONGRESS OF UROLOGY, Athens, Greece, April 10-18, 1955. Dr. Z. Kaires, 25, rue Voukourestion, Athens, Greece, Secretary General.

INTERNATIONAL HOSPITAL CONGRESS, Lucerne, Switzerland, May 30-June 3, 1955. Capt. J. E. Stone, International Hospital Federation, 10 Old Jewry, London, E.C.2, England, Hon. Secretary.

INTERNATIONAL MEDICAL CONGRESS, Verona, Italy, Sept. 1-4, 1955. For information write: % Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

INTERNATIONAL SURGICAL CONGRESS, Geneva, Switzerland, May 23-26, 1955. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

INTERNATIONAL SYMPOSIUM ON CARDIOVASCULAR SURGERY, Henry Ford Hospital, Detroit, Michigan, U.S.A., March 17-19, 1955. Dr. Conrad R. Lam, 2799 West Grand Boulevard, Detroit 2, Michigan, U.S.A., Chairman of Program Committee.

INTERNATIONAL SYNDICATE OF GYNECOLOGISTS AND OBSTETRICIANS, Meeting Hall of Medical Societies, Paris, France, June 27-28, 1955. Dr. Jacques Courtois, 1, rue Racine, Saint-Germain-en-Laye (S & O), France, Secretary-General.

JAPAN MEDICAL CONGRESS, Kyoto University and Kyoto Prefectural Medical College, Kyoto, Japan, April 1-5, 1955. Dr. Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary-General.

LATIN AMERICAN CONGRESS OF PHYSICAL MEDICINE, Lima, Peru, S. A., Feb. 14-19, 1955. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N. Y., U. S. A., Executive Director.

LATIN AMERICAN ELECTROENCEPHALOGRAPHICAL CONGRESS, Montevideo, Uruguay, S.A., March 21-24, 1955. For information write: Dr. R. Arana-Iniquez, Convencion 1287, Montevideo, Uruguay, S.A.

LATIN AMERICAN NEUROSURGICAL CONGRESS, Montevideo, Uruguay, S.A., March 21-24, 1955. For information write: Dr. R. Arana-Iniquez, Convencion 1287, Montevideo, Uruguay, S.A.

MIDDLE EAST MEDICAL ASSEMBLY, Campus of American University of Beirut, Beirut, Lebanon, April 22-24, 1955. Dr. John L. Wilson, American University of Beirut, Beirut, Lebanon, Chairman.

NATIONAL CONGRESS OF TUBERCULOSIS AND SILICOSIS, Mexico, D.F., Mexico, Jan. 23-29, 1955. Dr. Jose Nava Gonzalez, Balderas 32-312, Ap. Postal 7267, Mexico, D.F., Mexico, Secretary General.

NEURORADIOLOGIC SYMPOSIUM, London, England, Sept. 13-17, 1955. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

PAN-AMERICAN ACADEMY OF GENERAL PRACTICE, Lima, Peru, S. A., Feb. 11-25, 1955. Dr. Arturo Martinez, 54 East 72nd St., New York 21, N. Y., U. S. A., Secretary.

WORLD MEDICAL ASSOCIATION, Vienna, Austria, Sept. 20-26, 1955. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary-General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 21-23. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery 4.

ARIZONA:* *Examination and Reciprocity.* Phoenix, Jan. 12-14, 1955, and April 13-15, 1955. Ex. Sec., Mr. Robert Carpenter, 401 Security Bldg., Phoenix.

COLORADO:* *Examination.* Denver, Dec. 7-8. Exec. Sec., Mrs. B. H. Hudgens, 831 Republic Bldg., Denver 2.

DELAWARE: *Examination and Reciprocity.* Dover, Jan. 11-13, 1955. Sec., Dr. J. S. McDaniel, 229 So. State St., Dover.

IDAHO: *Examination and Endorsement.* Boise, Jan. 10-12, 1955. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

INDIANA: *Examination.* Indianapolis, June 21-23. Exec. Sec., Miss Ruth V. Kirk, 538 K. of P. Building, Indianapolis.

MARYLAND: *Regular. Examination.* Baltimore, Dec. 14-17. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 14. Sec., Dr. Robert H. Reddick, R.D. #2, Cambridge.

MASSACHUSETTS: *Examination.* Boston, Jan. 18-21, 1955. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

MISSISSIPPI: *Reciprocity.* Jackson, December. Asst. Sec., Dr. R. Whitfield, Old Capitol, Jackson 113.

MISSOURI: *Examination.* Jefferson City, Feb. 17-18. Exec. Sec., Mr. John A. Hailey, State Capitol Bldg., Box 4, Jefferson City.

NEBRASKA:* *Examination.* Omaha, June, 1955. Director, Bureau of Examining Boards, Mr. Husted K. Watson, State Capitol Bldg., Room 1009, Lincoln 9.

NEW YORK: *Examination.* New York City, Albany, Buffalo, and Syracuse, Feb. 15-18, 1955. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany 7.

NORTH CAROLINA: *Reciprocity and Endorsement.* Winston-Salem, Jan. 10. Sec., Dr. Joseph J. Combs, Professional Bldg., Raleigh.

NORTH DAKOTA: *Examination.* Grand Forks, Jan. 5-8, 1955. *Reciprocity.* Grand Forks, Jan. 8. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Examination.* Columbus, Dec. 13-15. *Reciprocity.* Sec., Dr. H. M. Platter, Wyandotte Bldg., Columbus 15.

OKLAHOMA:* *Examination.* Oklahoma City, June 7-8. Sec., Dr. C. Gallagher, 813 Braniff Bldg., Oklahoma City.

OREGON:* *Examination and Reciprocity.* Portland, Jan. 6-8. Ex. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland 4.

PENNSYLVANIA: *Examination.* Philadelphia, January. Acting Sec., Mrs. Marguerite B. Steiner, Box 911, Harrisburg.

VERMONT: *Examination and Endorsement.* Burlington, Jan. 27-29. Sec., Dr. F. J. Lawliss, Richford.

WASHINGTON:* *Examination and Reciprocity.* Seattle, Jan. 10-12. Sec., Mr. Edward C. Dohm, Olympia.

WISCONSIN:* *Examination and Reciprocity.* Madison, Jan. 11-13. Sec., Dr. Thomas W. Tormey Jr., Room 1140, State Office Bldg., Madison 2.

WYOMING: *Examination and Reciprocity.* Cheyenne, Feb. 7. Sec., Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. Benedict Cooper, Agana.

HAWAII: *Examination.* Honolulu, Jan. 10-13. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

MINNESOTA: *Examination.* Minneapolis, Jan. 4-5, 1955. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

OKLAHOMA: Oklahoma City, April 7-8, 1955. Sec., Dr. C. Gallagher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Dec. 4, 1954, and March 5, June 4, Sept. 10, and Dec. 3, 1955. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

WASHINGTON: *Examination.* Seattle, Jan. 5-6. Sec., Mr. Edward C. Dohm, Olympia.

WISCONSIN: *Examination.* Milwaukee, Dec. 4, Madison, March 12. Sec., Mr. W. H. Barber, 621 Ransom St., Ripon.

ALASKA: On application, Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

*Basic Science Certificate required.

DEATHS

Fox, Howard ⊕ New York City, professor emeritus of dermatology and syphilology, New York University College of Medicine and New York University Post Graduate Medical School, died in St. Clare's Hospital Oct. 19, aged 81. Dr. Fox was born in London, England, July 4, 1873. He was graduated from Yale University, New Haven, Conn., in 1894, and received his degree in medicine at Columbia University College of Physicians and Surgeons, New York, in 1898. He interned at the J. Hood Wright Hospital in New York. After graduate study in dermatology in Berlin and Vienna, Dr. Fox began his career in his father's services at the Vanderbilt Clinic and the New York Skin and Cancer Hospital in 1904. He received his first appointment as professor of dermatology at Dartmouth Medical School in Hanover, N. H., in 1913. This was followed by the professorship of dermatology and syphilology at the New York Polyclinic Medical School and Hospital in 1922. He resigned in 1924, and in 1925 accepted the chair in dermatology and syphilology at the New York University and Bellevue Hospital Medical College. During World War I he commanded an Army Base Hospital in France and later was a colonel in the U. S. Army Medical Reserve. He served as the first commander of Caduceus Post 818 of the American Legion from 1920 to 1922 and again served as commander from 1938 to 1940. In World War II he was appointed a consultant in tropical diseases to the Secretary of War. He was elected a member of the American Dermatological Association in 1908 and was vice-president in 1915-1916, president in 1925-1926, and historian for many years, beginning in 1916, when this post was first established; from 1938 to 1944 he was a member of the board of directors. He became a member of the New York Dermatological Society in 1909, and served twice as president, in 1915 and in 1928. He was one of the early members of the Manhattan Dermatologic Society, and was president in 1917 and 1933 and an honorary member from 1940 until his death. He was elected a fellow of the New York Academy of Medicine in 1906 and was chairman of the section on dermatology and syphilology from 1921 to 1923. He was vice-president in 1936-1937, president in 1938-1939, and trustee, 1939-1941, of the Medical Society of the County of New York, serving for many years as chairman of various committees. He was secretary of the Section of Dermatology and Syphilology of the American Medical Association from 1912 to 1914 and chairman, 1914-1915. He was the first chairman appointed to the Scientific Exhibit of the Section of Dermatology and Syphilology in 1924 and a delegate from the section in 1921, 1922, and from 1924 to 1927, when he was awarded a certificate of merit for an exhibit of cultures of different fungi. He was the first president of the American Academy of Dermatology and Syphilology in 1938 and of the Association of Dermatosyphilologists of Greater New York in 1940-1941. Dr. Fox was president for many years of the American Board of Dermatology and Syphilology and was president of the Association of Syphilis Clinics from its formation in 1938 until his death. From 1926 to 1928 he was the first chairman of the section of dermatology and syphilology of the Medical Society of the State of New York. He was a vice-president of the Deutsche Dermatologische Gesellschaft, Bonn, Germany, in 1929, vice-president and secretary of the American delegation at the eighth International Congress of Dermatology at Copenhagen, Denmark, in 1930, and one of the honorary presidents of the ninth International Congress of Dermatology at Budapest, Hungary, in 1935. He was an honorary member of many foreign dermatological societies. Dr. Fox served as attending dermatologist for the Red Cross Hospital, Harlem Hospital, New York Nursery and Child's Hospital, Lenox Hill Hospital, Willard Parker Hospital, Bellevue Hospital, Riverside Hospital, a Veterans Administration Hospital, and the U. S. Public Health Service. He was consulting dermatologist at the Muhlenberg (N. J.), Plainfield (N. J.), Union, King's Park State, Lutheran, Manhattan Eye, Ear, and Throat, Knickerbocker, St. Vincent's, Lenox Hill, Beth Israel, Bellevue, Miseri-

⊕ Indicates Member of the American Medical Association.

cordia, Riverside, New York Post Graduate, Willard Parker, and Metropolitan hospitals, and at Montclair (N. J.) Hospital, Vassar Brothers Hospital in Poughkeepsie, U. S. Marine Hospital in Ellis Island, and the U. S. Marine Hospital in Stapleton (Staten Island). He was elected to the editorial board of the *Archives of Dermatology and Syphilology* in 1936 and the next year became editor in chief; a special number was dedicated to him in November, 1947, at the end of his service. He was collaborating editor of the *Acta Dermato-Venereologica,* Stockholm, Sweden; consulting editor of the *New York State Medical Journal;* and member of the editorial board of *Excerpta Medica,* Amsterdam, Netherlands. He was the author of "Skin Diseases in Infancy and Childhood" and of many articles for medical journals. In 1931 he was awarded the doctor of science degree from Rollins College in Winter Park, Fla.

Pisani, Antonio Davide ⊕ New York City; born Nov. 6, 1871; Columbia University College of Physicians and Surgeons, New York, 1896; also a graduate in pharmacy; in September named "general practitioner of the year" by the New York County Medical Society and in October designated the "outstanding general practitioner of the year" by the council of the Medical Society of the State of New York; an Associate Fellow of the American Medical Association; a member of local school board number 1 from the date of the consolidation of the City of New York; a commissioner of the board of education from 1909 to 1917; president of the Italian Educational League, and active in the Council of Adult Education; in 1913 Victor Emmanuel III, King of Italy, conferred on him the title of Chevalier of the Crown of Italy, in recognition of his loyal service to his fellow Italo-Americans; on Sept. 9 was honored for completion of 50 years as a trustee of the Italian Savings Bank and East River Savings Bank; visiting physician at the Columbus Hospital from 1915 to 1948, serving as president of its hospital board from 1942 to 1944; died in St. Vincent's Hospital Oct. 14, aged 82.

Hanson, Louis Hedven ⊕ Lieutenant Colonel, U. S. Army, retired, Shrewsbury, N. J.; born in 1877; George Washington University School of Medicine, Washington, D. C., 1904; entered the regular Army in 1906 and retired Aug. 31, 1929; served at Army posts in all parts of continental United States, as well as in Alaska and the Philippine Islands; as a captain, in 1914, was post surgeon at Jolo, Philippine Islands, during a cholera epidemic; in 1916, during General Pershing's punitive expedition into Mexico, commanded an ambulance train; during World War I commanded the base hospital at Camp Bowie, Fort Worth, Texas, training area for the 36th Division, during the influenza epidemic; subsequent service included tours of duty as post surgeon at Columbus, N. Mex., Fort Des Moines, Iowa, and Fort Monmouth, N. J.; for many years president of the city board of health; died in the U. S. Naval Hospital, St. Albans, N. Y., Oct. 5, aged 77.

Smyth, Henry Field ⊕ Pocasset, Mass.; born Nov. 1, 1875; University of Pennsylvania Department of Medicine, Philadelphia, 1897; retired in 1941 as assistant professor of industrial hygiene at his alma mater, where he was associated with the faculty in various capacities for many years and, in addition, had served as director pro tem of the laboratory of hygiene since 1932; an Associate Fellow of the American Medical Association; fellow of the American College of Physicians; member of the American Public Health Association and the Industrial Medical Association; past president of the Pennsylvania Public Health Association; received the degree of doctor of public health from the University of Pennsylvania in 1912; joint author of "Industrial Microbiology," published in 1930; died in the Barnstable County Hospital Oct. 15, aged 79, of arteriosclerosis, nephrosclerosis, and uremia.

Guild, Cameron St. Clair ⊕ Sunmount, N. Y.; born in Nova Scotia in 1896; Dalhousie University Faculty of Medicine, Halifax, N. S., Canada, 1925; member of the American Trudeau Society, of which he was executive secretary, and of the Ameri-

can Public Health Association; formerly associated with the Mississippi State Board of Health at Tupelo, consultant to the U. S. Public Health Service, and director of special programs for the National Tuberculosis Association; a flight lieutenant in the Royal Flying Corps during World War I; at one time chief of the tuberculosis division, Veterans Administration branch office in New York City; on the staff of the Veterans Administration Hospital; received the degree of doctor of public health from Yale University in New Haven, Conn., in 1930; died Oct. 18, aged 58.

Perkins, Charles Winfield ✠ Norwalk, Conn.; Hahnemann Medical College and Hospital of Philadelphia, 1901; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society and the American College of Radiology; fellow of the New York Academy of Medicine; formerly on the faculty of the New York Post Graduate Medical School; served during World War I; member of the staff of the Norwalk Hospital; died in the Massachusetts General Hospital, Baker Memorial, Boston, Oct. 7, aged 76, of bleeding duodenal ulcer and acute cholecystitis.

Allan, Alexander ✠ Buffalo; University of Buffalo School of Medicine, 1898; died Aug. 24, aged 76, of cerebral thrombosis.

Allen, Ernest Green ✠ Patterson, Calif.; born in Upper Lake, March 21, 1886; University of California Medical School, San Francisco, 1923; the Chamber of Commerce of Patterson designated Sept. 21, 1952, as Dr. Allen Day in recognition of the years of service that he gave to the community; past president of the Stanislaus County Medical Society; past president of the Chamber of Commerce; for many years on the Patterson Union High School board of trustees; on the staff of the Del Puerto Hospital, where he died Sept. 2, aged 68, of coronary thrombosis.

Anderson, Francis G., Roanoke, Va.; College of Physicians and Surgeons, Baltimore, 1889; killed Sept. 12, aged 91, in an automobile accident.

Anderson, James Sumpter ✠ Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1921; member of the Southeastern Surgical Congress; fellow of the International College of Surgeons and the American College of Surgeons; on the staffs of the St. Thomas, Mid-State Baptist, and Nashville General hospitals; died Sept. 21, aged 61, of a heart attack.

Arey, Jennie Grace McIntosh, Gardner, Mass.; Tufts College Medical School, Boston, 1914; died Aug. 13, aged 61, of diabetes mellitus, hypertension, and arteriosclerotic heart disease.

Arnold, Joseph Edwin, Cameron, W. Va.; University of Nashville (Tenn.) Medical Department, 1907; died in Weston Aug. 14, aged 73, of chronic myocarditis.

Austin, Florence Olive ✠ Talmadge, Calif.; Rush Medical College, Chicago, 1919; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; associated with the Mendocino State Hospital; served on the staff of the Veterans Administration hospitals in Los Angeles and Roanoke, Va.; died in Ukiah (Calif.) General Hospital Sept. 20, aged 60, of coronary occlusion.

Bacon, Joshua E. ✠ Dubuque, Iowa; University of Michigan Medical School, Ann Arbor, 1924; member of the American Academy of Pediatrics; specialist certified by the American Board of Pediatrics; at one time on the faculties of Harvard in Boston and of his alma mater; served as president of the Dubuque County Medical Society; affiliated with Xavier Hospital, Finley Hospital, and the Mercy Hospital, where he died Oct. 15, aged 53, of coronary occlusion.

Baldwin, Lyman H., Gillett, Wis.; Bennett Medical College, Chicago, 1895; died Aug. 6, aged 87, of diabetes mellitus and arteriosclerosis.

Brown, Anson Lee ✠ Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1927; died in the University Hospital Oct. 3, aged 61, of cardiac failure.

Cameron, George Dana Jr., Braceville, Ohio; New York Homeopathic Medical College and Flower Hospital, New York, 1930; served as medical director at Ravenna (Ohio) Arsenal; died in the Trumbull Memorial Hospital, Warren, Sept. 28, aged 50, of injuries received in an automobile accident.

Cann, Walter Edward, Kirkwood, Del.; Medico-Chirurgical College of Philadelphia, 1899; died in the Delaware Hospital, Wilmington, Sept. 11, aged 84, of myocardial infarction and benign prostatic hypertrophy.

Doughty, James Frank ✠ Tracy, Calif.; Northwestern University Medical School, Chicago, 1923; since 1946 member of the Council on Rural Health of the American Medical Association and in 1923 member of its House of Delegates; past president of the San Joaquin County Medical Society and the California Physicians' Service; served as a trustee of the San Joaquin local health district; on the staff of the Tracy Community Hospital, where he died Oct. 19, aged 56, of coronary occlusion.

Downing, Ernest St. Elmo, Newington, Ga.; University of Georgia Medical Department, Augusta, 1913; died in Savannah July 21, aged 67.

Gregor, David Gilbert ✠ Watertown, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1919; fellow of the American College of Surgeons; consultant at St. Lawrence State Hospital in Ogdensburg; on the staff of the Mercy Hospital and the House of the Good Samaritan, where he died Oct. 16, aged 61, of rupture of an aortic aneurysm.

Hayes, Michael Francis ✠ Hibbing, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; for 38 years school physician and for 29 years health officer; on the staff of the Hibbing General Hospital; died in Moose Lake (Minn.) State Hospital Sept. 10, aged 70, of coronary occlusion.

Headings, Isaac Griffy ✠ McAlisterville, Pa.; Jefferson Medical College of Philadelphia, 1893; treasurer of the Juniata County Medical Society for many years; on the courtesy staff of the Lewistown Hospital, where he died Sept. 1, aged 84, of uremia and arteriosclerosis.

Herman, Moses, New York City; Long Island College Hospital, Brooklyn, 1909; cardiologist at the Gouverneur Hospital; died in Montefiore Hospital Oct. 20, aged 72, of carcinoma of the prostate.

Hudes, Nathan ✠ Kew Gardens, N. Y.; Cornell University Medical College, New York, 1927; specialist certified by the American Board of Internal Medicine; served during World War II; on the staffs of St. John's Hospital and Kew Gardens General Hospital, where he died Oct. 4, aged 54, of uremia.

Hughes, Jones Russell ✠ Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1933; on the staff of the Hollywood Presbyterian Hospital, where he died Sept. 7, aged 51, of coronary thrombosis.

Hume, John Elias ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1900; served during World War I; died in the Shore Memorial Hospital, Somers Point, N. J., Sept. 6, aged 79.

Hund, Erwin John, Reno, Nev.; Medico-Chirurgical College of Philadelphia, 1914; served during World War I; died Sept. 28, aged 64, of carcinoma of the pharynx.

Huston, Henry Edwin ✠ Grove, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1917; served during World War I; honorary member and past president of the Cherokee Rotary Club; member of the Grove Rotary Club; died Sept. 26, aged 61.

Hutton, Vernon Sr. ✠ West Nashville, Tenn.; University of Tennessee Medical Department, Nashville, 1899; affiliated with Nashville General Hospital and St. Thomas Hospital, where he died Sept. 4, aged 77, of leukemia.

Johnson, John Ray ✠ Lima, Ohio; Starling Medical College, Columbus, 1907; past president of the Northwest Medical Association; served during World War I; immediate past chief of St. Rita's Hospital, where he died Oct. 11, aged 69, of arteriosclerosis.

Johnston, Arthur Merry ✠ Utica, N. Y.; New York University Medical College, New York, 1896; an Associate Fellow of the American Medical Association; for many years on the staff of St. Elizabeth Hospital; died Sept. 29, aged 80, of arteriosclerotic heart disease.

Leeper, David Dwight, Laurel, Mont.; Rush Medical College, Chicago, 1901; died Aug. 3, aged 75, of acute myocardial infarction.

Lewis, Everett Marion, Tulsa, Okla.; University of Louisville (Ky.) Medical Department, 1911; died in the Community Hospital in Long Beach, Calif., Sept. 11, aged 68.

Liebert, Maxwell ✠ Yankton, S. D.; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany, 1920; affiliated with Yankton State Hospital; died Sept. 3, aged 59, of coronary infarct.

Long, George Reuben Hunter ✠ Luray, Va.; Medical College of Virginia, Richmond, 1910; for many years county physician and county medical examiner; affiliated with the Page Memorial Hospital, where he was president of the staff; died Oct. 3, aged 67, of cerebral hemorrhage.

Lowden, Mary Murray, Flushing, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1897; died Aug. 12, aged 82, of carcinomatosis.

Lowth, Robert John ✠ Chicago; Northwestern University Medical School, Chicago, 1926; on the staff of St. Elizabeth Hospital; died Oct. 24, aged 61, of massive pulmonary hemorrhage and Hodgkin's disease.

Lowy, Otto ✠ Newark, N. J.; Medical College of Virginia, Richmond, 1901; died in Hollywood, Fla., Oct. 12, aged 74, of spinal osteoarthritis and coronary sclerosis.

Lynch, Cornelius Joseph ✠ Quincy, Mass.; Harvard Medical School, Boston, 1902; formerly city commissioner in Quincy; headed the tuberculosis clinic at the Quincy Health Center; consultant on eye, ear, nose, and throat diseases at the Carney Hospital in Dorchester; on the consulting staff at the Quincy City hospital, where he died Sept. 21, aged 75, of coronary occlusion.

McAuliffe, George Birmingham ✠ New York City; born in New York Sept. 20, 1864; College of Physicians and Surgeons, medical department of Columbia College, New York, 1888; specialist certified by the American Board of Otolaryngology; member of the American Otological Society; fellow of the American College of Surgeons; at one time assistant professor of clinical surgery (otology) at Cornell University Medical College; served on the staff of Misericordia Hospital; died in the New York Hospital Oct. 1, aged 90, of carcinomatosis.

Macdonald, William Clifford, Oxford, N. Y.; Harvard Medical School, Boston, 1899; served during World War I; died in Chenango Memorial Hospital in Norwich Oct. 3, aged 81, of myocardial infarction.

McFerrin, Samuel Austin ✠ Renick, W. Va.; University College of Medicine, Richmond, 1905; died Oct. 21, aged 79, of coronary occlusion.

McGlennon, William J. Bernard, Harrison, N. J.; Baltimore Medical College, 1905; police and fire surgeon, and for many years member of the board of health; on the staff of St. James Hospital in Newark and West Hudson Hospital in Kearny; during World War II examining physician for Hudson County Selective Service Board number 37, and for achievement with the board was awarded the Selective Service Medal by the director; died Oct. 11, aged 71.

Mackel, Charles Francis, Philadelphia; Maryland Medical College, Baltimore, 1912; served during World War I; died Oct. 6, aged 68.

McKenney, James Allen ✠ Oakland, Calif.; St. Louis University School of Medicine, 1914; served during World War I; associated with Alameda County clinics at Highland Hospital for many years; died in Yosemite Valley, Calif., Oct. 3, aged 75, of coronary occlusion, while attending a meeting.

MacLean, William McKinley, New York City; Columbia University College of Physicians and Surgeons, New York City, 1926; certified by the National Board of Medical Examiners; served on the medical staffs of the New York Telephone Company and the United Fruit Company; died in the New York Hospital Oct. 29, aged 57.

Mason, Robert Elijah ✠ Anderson, S. C.; Medical College of Georgia, Augusta, 1900; died Oct. 13, aged 76, of coronary thrombosis and hypertension.

Mathis, Edward Jones ✠ Beaumont, Miss.; Medical College of Alabama, Mobile, 1890; died Oct. 27, aged 88.

Mattes, Abraham, New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1915; served during World War I; died Oct. 9, aged 60, of congestive heart failure.

Nelles, Howard W. H. ✠ Toledo, Ohio; Rush Medical College, Chicago, 1900; member of the staff of the Mercy Hospital, where he died Oct. 19, aged 76, of cerebral thrombosis.

Nelson, William, Hanover, Va.; Medical College of Virginia, Richmond, 1916; died Sept. 29, aged 61.

Newman, Israel, Augusta, Maine; Chicago College of Medicine and Surgery, 1916; member of the American Psychiatric Association and the New England Society of Psychiatry; assistant physician at the Augusta State Hospital; died in the Augusta General Hospital Sept. 28, aged 71, of coronary thrombosis.

Newman, Jefferson Clarence, McAllen, Texas; Chicago College of Medicine and Surgery, 1914; while practicing in Grand Island, Neb., served as director of the county health department; died in the McAllen Municipal Hospital Sept. 17, aged 64, of lobar pneumonia and leukemia.

Nugen, Dorcie Ray ✠ Sumas, Wash.; Rush Medical College, Chicago, 1917; died in Bellingham Oct. 8, aged 66.

O'Brien, Louis Thomas, Chicago; University of Illinois College of Medicine, Chicago, 1914; served during World War I; died in the Illinois Central Hospital Oct. 23, aged 67, of abdominal sarcomatosis.

O'Connor, Michael James ✠ Tucson, Ariz.; Creighton University School of Medicine, Omaha, 1931; specialist certified by the American Board of Ophthalmology; member of the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; served during World War II; on the courtesy staff, Tucson Medical Center; consultant, Veterans Administration Hospital; on the staff of St. Mary's Hospital, where he died Oct. 3, aged 46, of cirrhosis of the liver.

Parmuth, Samuel Abraham, Chicago; Jenner Medical College, Chicago, 1913; served on the staff of the Norwegian American Hospital; died Oct. 25, aged 70, of arteriosclerotic heart disease.

Paul, Luther Gordon ✠ Newton, Mass.; Harvard Medical School, Boston, 1899; an Associate Fellow of the American Medical Association; served on the faculties of Tufts College Medical School in Boston and of his alma mater; fellow of the American College of Surgeons; on the staff of the Carney Hospital in Boston; died in the Newton Wellesley Hospital Oct. 6, aged 83, of cerebral hemorrhage and arteriosclerosis.

Searle, George James Sr., Bradenton, Fla.; Boston University School of Medicine, 1888; died Oct. 19, aged 92.

Shaunty, John Norris, Enid, Okla.; University of Louisville (Ky.) Medical Department, 1903; veteran of the Spanish-American War and World War I; died in Little Rock, Ark., Oct. 15, aged 75.

Sheridan, Lawrence A. ✠ Wilkes-Barre, Pa.; Jefferson Medical College of Philadelphia, 1903; served as president of the city board of health; chief visiting surgeon and consulting surgeon at Mercy Hospital; a director and secretary of the board of the Wilkes-Barre Deposit and Savings Bank; died Oct. 16, aged 73.

DIED WHILE IN MILITARY SERVICE

Lynn, Frank Wisner ✠ Lieutenant Colonel, U. S. Army, Chicago; Rush Medical College, Chicago, 1942; interned at the Letterman General Hospital in San Francisco, where he served a residency; entered the Medical Corps of the U. S. Army as a first lieutenant Dec. 17, 1943; died in the Far East Sept. 3, aged 39, in an airplane accident.

FOREIGN LETTERS

AUSTRIA

Neurinoma of the Acoustic Nerve.—At the meeting of the Society of Physicians of Vienna on July 18, Dr. H. Reisner and Dr. H. Kraus reported the case of a woman, aged 48, who at the age of 15 sustained an injury of the cranium and of the right eye. She had been blind in the right eye since then. For 11 years preceding admission she experienced gradually increasing loss of hearing on the right side and disturbance in her sense of equilibrium. Beginning in January, 1954, her condition deteriorated greatly, and she was admitted to the hospital. Neurological examination revealed hypesthesia in the region of the right trigeminal nerve; bilateral loss of hearing, which was more severe on the right than on the left side; lack of vestibular response; and cerebellar symptoms. Although ventriculography showed normal results, the patient was subjected to an operation on the basis of an assumed diagnosis of bilateral neurinoma of the acoustic nerve. In the course of the operation, the right tumor was completely and the left one subtotally removed. The tumors were the size of walnuts. After operation the patient regained her ability to walk, but her bilateral deafness persisted. This was the first successful removal of bilateral tumors of the acoustic nerve carried out in Austria.

There are two methods of surgical treatment for neurinoma of the acoustic nerve. Intracapsular curettage of the tumor, leaving the capsule behind, was introduced by Cushing because of the high mortality prevailing at that time. The other procedure is the radical extirpation of the tumor together with its capsule. Radical extirpation is more effective, because it is less likely to be followed by relapse. Cushing reported five-year cures after curettage in 44% of his patients, whereas Horrax obtained five-year cures in 61% after radical extirpation. In the cases reported by Olivecrona the difference between the two methods was even greater. Radical removal demands greater skill in surgical technique as well as greater endurance from the patient. Aside from postoperative hemorrhage, the danger lies in the likelihood of malacia of the pons cerebelli, of damage to the cerebral nerves, with bulbar disturbances and paralysis of deglutition, and in the threat of edema in the medulla oblongata with its vital centers. Preservation of the facial nerve is possible in few patients. In elderly patients or in those in poor general condition intracapsular curettage is performed, but in the others complete extirpation is preferred. The mortality rate from surgical treatment of neurinomas of the acoustic nerve is still about 20%. In patients with bilateral neurinoma of the acoustic nerve, which is rare, the prognosis is particularly unfavorable. Two patients preceding the present one who were operated on for bilateral acoustic nerve tumors died immediately following the intervention. If the operation is performed in two stages the prognosis is particularly unfavorable, because, after removal of the tumor on one side, there follows a massive shifting of the pons cerebelli and the medulla oblongata toward the side operated on. It is largely due to modern methods of anesthesia, with controlled blood pressure reduction and hibernation, that the patient in the reported case tolerated the operation so well. In this patient, first the walnut-sized, somewhat laterally located tumor on the right side was radically extirpated after careful dissection of the lower cerebral nerves, and immediately after that a tumor of the same size in a somewhat more medial location was removed on the left side. Only small capsular remnants that adhered to the vagus and glossopharyngeal nerve were left behind on the left side for fear of producing disturbances in the medulla oblongata. With the modern methods of anesthesia it has been possible for the authors to perform radical operations on eight of nine patients with neurinomas of the acoustic nerve, and there was only one death as a result of malacia of the pons cerebelli. This number included four patients with relapsed cases, in whom during the first operation curettage only had been performed, and in three of these a radical extirpation was performed.

The items in these letters are contributed by regular correspondents in the various foreign countries.

BRAZIL

Clinical Hematological Study.—Drs. J. Marques Castro and Antoine Younes of the Hospital São Paulo reported (*Rev. paulista med.* **45**:169, 1954) the results of an experimental and statistical study of plasmoglobular interdependence. They studied 50 patients with various diseases, as well as some pregnant women, to form an intentionally heterogenous group of persons with low, medium, and high sedimentation rates and plasma globulin levels. The total globulins, gamma globulins, albumin-globulin ratio, fibrinogen, hematocrit, and sedimentation rate were determined for each patient, enabling the authors to compute means and their respective standard deviations. The mean level for total globulin was 31.4 gm. ± 8.9 gm. per liter, gamma globulin 16.4 gm. ± 5.6 gm. per liter, albumin-globulin ratio 1.3 ± 0.59, fibrinogen 4.33 gm. ± 1.49 gm. per liter, hematocrit 36.84% ± 7.86%, and sedimentation rate 57 mm. ± 39.8 mm. From these values, Pearson's correlation coefficients and regression equations were computed, and the authors concluded that the knowledge of the hematocrit may enable one to estimate the sedimentation rate with fair accuracy by means of the regression equation for the normal protein level. The excess over the calculated value will indicate the presence of qualitative and quantitative abnormalities in the composition of the plasma. This shows how unwise it is to rely on a given value of the sedimentation rate when the hematocrit value is unknown. This conclusion is contrary to that of Wintrobe, who devised a nomogram to determine the normal hematocrit for any blood when given an observed hematocrit value and the sedimentation rate.

If the sedimentation rate is the result of complex and sometimes even antagonistic phenomena, it is practically impossible to compute the value of the final phenomenon by the elimination of the influence of only one variable, which, in the case in point, would be the plasma percentage. The total globulin level has a most important influence on the sedimentation rate. Gamma globulin and the fibrinogen levels are other factors of varying importance. The study of the various factors influencing the sedimentation rate, by means of the partial correlation method, reveals the intricacy of the interaction that occurs in these factors before the final result, the separation of plasma and erythrocytes, is reached. Serum albumin appears also to have assumed a role in sedimentation, through a possible antagonistic action on globulins. The determination of the sedimentation rate, through the computation of the regression equation of the value of the albumin-globulin ratio, is justified when one aims at the routine elementary fractionation of the plasma proteins, as well as determination through the regression of the values of the globulin level to the values of the sedimentation rate. Aiming at the same result, the two equations would enable one, through the mean values, to do a better job of fractionation. At least it would be useful to compare the levels obtained by the chemical fractionation with those derived from the sedimentation rates.

Tetanus in Children.—Drs. Ricardo Veronesi and Dacio Pinheiro of the São Paulo State University Hospital reviewed (*Rev. Hosp. clín.* **9**:367, 1954) 200 cases of tetanus in children under 15 years of age treated at the hospital between 1945 and 1953. This series does not include umbilical tetanus in newborn infants. Two patients were less than a month old; two were 1 to 12 months; 34 were 13 months to 5 years; 102 were 6 to 10 years; and 60 were 11 to 14 years old. There were 69 deaths. The age-specific case fatality rates decreased as age increased. Lockjaw, the most frequent initial symptom,

was observed in 111 patients, followed in frequency by backache in 40, stiff neck in 25, pain in the legs in 14, dysphagia in 9, and fever in 9.

Trying to correlate the duration of the incubation period and the case fatality rate, the authors divided the 144 patients for whom the incubation period was recorded as follows: 1 to 5 days in 19; 6 to 10 days in 56; and 11 or more days in 69. In these three groups, in which there were 11, 26, and 18 deaths, respectively, the case fatality rates were 57.9, 46.4, and 26.1%, which would indicate that the case fatality rate decreases as the incubation period increases. It is known that infections with highly virulent strains of Clostridium tetani have short incubation periods and that such strains produce large quantities of toxin of great potency. The length of time between the appearance of the initial symptom and the occurence of the first spasm is definitely related to the prognosis. An elapsed time of less than 48 hours is associated with a poor prognosis, and the survival time of such patients is only about three times this elapsed time. Of the 200 patients in this series, 11 had no spasms, and for 89 there was no indication of the presence or absence of spasms. In the remaining 100 patients, the length of time between the initial symptom and the first spasm was one to two days in 55, three to five days in 28, and six or more in 17. In these three groups, in which there were 54, 3, and 1 deaths, respectively, the case fatality rates were 98.2, 10.7, and 5.9%.

Vagotomy in Treatment of Peptic Ulcers.—At a meeting of the National Academy of Medicine, Dr. Arrigo Raia of São Paulo reported a study of the results of vagotomy in 32 patients, 20 of whom had duodenal, 5 of whom had gastric, and 4 of whom had jejunal ulcer. The other three had chronic gastritis with hyperchlorhydria. The study of the curves of gastric acidity and of gastric motility after vagotomy in the immediate and late postoperative period lead the author to conclude that vagotomy may be used in the treatment of patients with gastroduodenal ulcer, as it does not cause the patient any harm, but that it should not be used routinely in such patients. It should be performed in patients who have postgastrectomy peptic ulcer and may be used in some patients with duodenal and gastric ulcer, especially in young patients who are not relieved by medical treatment and in some with chronic gastritis with hyperchlorhydria.

Vagotomy may be performed through a thoracic or an abdominal incision. The abdominal approach is preferred, as it permits the exploration of the gastroduodenal lesion. Whenever a vagotomy is performed, a pyloroplasty or a gastroenterostomy should be performed to prevent the occurrence of delayed emptying of the stomach. Vagotomy lowers gastric acidity. By caffeine and histamine stimulation of the gastric mucosa it is observed that, after neurectomy, the acidity is much lower than when the nerve supply is intact. After vagotomy, motor disturbance of the gastrointestinal tract, especially of the stomach, is observed. These disturbances cause emptying of the stomach to be delayed, and this causes great discomfort to the patient. Motor disturbance of the esophagus and intestine is less frequent. Diarrhea is not as frequent as gastric motor disturbance. In some patients it lasts only a short time, while in others it may persist for a year. The percentage of recurrence of the ulcer is higher after vagotomy than after gastrectomy, and complications are as frequent after vagotomy as after gastrectomy. Gastrectomy is, therefore, preferred to vagotomy in most patients.

Diagnosis of Schistosomiasis.—A new technique for preparing schistosomal antigen for diagnostic skin-testing is described by Dr. José Ruiz in *Memórias do Instituto Butantan* (**25**:5-13, 1953). It consists of (1) the treatment of adult worms (obtained from guinea-pigs) with a mixture of alcohol and ether in equal amounts, before desiccating in vacuo; (2) trituration of the dried worms and washing the powder with the alcohol-ether mixture; (3) desiccating in vacuo extracting with the Coca merthiolated liquid, the extraction being made in the proportion of 1:200. The quantity of extractor liquid to be used, with each amount of powder is given in the formula: $(82\ M + 23\ F) \div 5{,}000 = N$, where N is the quantity (ml.) of extractor liquid to be used. Eighty-two and 23 are the mean weight (mcg.) of the adult worms, males (M) and females (F), respectively. The antigens prepared according to Meyer and Pifano's method were tested against another one in 89 persons (11 known positives, 67 suspected positives, and 11 known negatives). The results agreed in every case. The new antigen is more easily prepared than the old and has a high degree of purity without traces of proteins, lipoids, and polysaccharides.

CHILE

Bronchiectasis.—At the second meeting of 1954 of the Medical Society of Santiago, Dr. Luchini stated that peribronchial inflammation or extrinsic pressure leading to the obstruction of a bronchus and thus producing pulmonary atelectasis is a major cause of bronchiectasis. In patients in whom there is no infection the atelectasis may last for several months but is reversible; in those in whom an infection coexists, fibrosis of the pulmonary parenchyma may ensue. Such diseases as measles, whooping cough, bronchopneumonia, and acute or chronic bronchitis lead to the destruction of the muscular-elastic elements of the bronchial wall; and the cough, which produces hypertension in the bronchial tree, produces a certain degree of dilatation. Bronchiectasis may be congenital or acquired. The latter may be (1) of unknown origin (associated with such diseases as measles, whooping cough), (2) due to bronchial obstruction (extrinsic as a result of a primary tuberculous complex or Hodgkin's disease; in the bronchial wall as a result of such factors as cancer or adenoma; or in the lumen as the result of a foreign body), or (3) due to pulmonary retraction as a result of such factors as pneumonoconiosis, tuberculosis, or infarcts.

Dr. Martin Etchart reviewed the findings in 50 operations and nine autopsies. In most cases cylindric, sacculated, or mixed lesions were found. In 32 patients there was a frank predomination of bronchial and peribronchial inflammation. In nine the main characteristic was pulmonary induration, and in four the above mentioned lesions were combined. Pneumonia and chronic bronchopneumonia were present in four patients; two had cystic bronchiectasis; and in one the main lesion was endobronchitis. Because of the frequency of bronchiectasis following whooping cough, the lungs of seven children who died of this disease were studied in detail. Acute peribronchitis and bronchopneumonia, subacute peribronchitis and interstitial pneumonia, subacute peribronchitis and bronchopneumonia, subchronic peribronchitis, and chronic peribronchitis were each found in one case. Chronic peribronchitis and chronic pneumonia were found in the remaining two.

Dr. F. Diaz stressed the following radiological signs of bronchiectasis: (1) lack of "foliage"; (2) destructive lesions in the larger bronchi produced by bronchitis, which are not so intense as in the smaller bronchi; (3) the characteristic gloved finger appearance of the bronchi and progressive bronchial destruction leading to the formation of pulmonary abscesses visible only when a good injection of the iodized oil is obtained; (4) signs of bronchial spasms; and (5) changes in the bronchial mucosa. The author concluded by stressing the importance of a good bronchographic technique, because it not only permits an early diagnosis but also gives the surgeon a good idea of what he must accomplish by operation.

Dr. H. Salvestrini stated that about 87% of the patients studied were under 40 years of age; symptoms were first noted in 80% when the patient was under 20 years of age. The progressive aggravation of symptoms was the rule, and death occurred generally in 10 to 13 years after the onset. In 67% there was a clear history of a primary tuberculous complex, whooping cough, or measles, complicated in most patients by atelectasis, which in many was confirmed by a roentgenogram. Frequent attacks of pneumonia were noted in 30%. Cough productive of large quantities of sputum, especially in the morning or with changes in posture, was present in most patients. The sputum was purulent in 90%. Hemoptysis occurred in 31%. Occasional fever was present in 85% and loss of weight in 55%. Preoperative treatment consists in improving the general condition of the patient and clearing the bronchial tree of all secretions. Postural drainage and spraying with antibiotics are helpful. A

total of 74 patients were subjected to pneumectomy, lobectomy, segmental resections, or a combination of these. A follow-up of 73 of these revealed that bronchial fistula was present in 6 and that postoperative atelectasis occurred in 3. Four died, two in the immediate postoperative period and two between 6 and 14 months after the operation.

Bacterial Endocarditis.—Writing in the *Revista medica de Valparaiso* (vol. 1, no. 7) Dr. J. Alvayay and his co-workers report on 77 patients with bacterial endocarditis. A great similarity between the findings in Chile and those in postwar Germany was noted. The case fatality rate was 73%. A history of rheumatic fever was noted in 41% of the patients. A positive blood culture was found in only 24%. Splenomegaly was present in 80%, and hippocratic fingers were seen in only 35%. The mitral valve was affected in 25%, the aortic valve in 22%, and involvement of both valves was present in 52%. Heart failure was present but was compensated in 48%, decompensated in 40%, and was absent in 11%. The sedimentation rate was over 40 mm. in 78%. Leukopenia was present in 17%, leukocytosis in 56%, and the leukocyte count was normal in 26%. Albuminuria was present in 58% and hematuria in 60%. Heart failure was the cause of death in 75%, cerebral infarction in 12%, and renal failure in 5%. The case fatality rate was 60% in the group with negative blood cultures and only 36% in the group with positive cultures. The authors state that in the group with negative blood cultures (45 of the 59 patients on whom cultures were obtained) there were more patients with a double valvular lesion, severe anemia, leukopenia, and renal failure than in the group with positive cultures. More cerebral, renal, and splenic infarcts were also found in the group with negative cultures.

ENGLAND

Future of Medical Research.—An international conference on the selection, training, and support of medical research workers was held in London in October. The conference was arranged by the Council for International Organizations of Medical Sciences, a body under the auspices of the World Health Organization and the United Nations Educational, Scientific, and Cultural Organization. Delegates came from medical research organizations in Australia, Belgium, Canada, Germany, Holland, India, Ireland, Israel, New Zealand, Norway, South Africa, Sweden, Switzerland, the United Kingdom, the United States, and Yugoslavia. It was concluded that the ideal research organization should consist of two complementary parts, the universities and a central research organization, neither of which can develop to the full without the support of the other, although each has certain functions that it alone can perform. The unique function of the universities is that they are the nursery of research workers, and for medical research to flourish the universities must be adequately supported. The intellectual climate must be favorable for the research worker. A large, well-equipped building alone is not enough. The imagination of the recruit to medical research must be fired. The universities have long been a source of new ideas, which have come more often than not from the investigation of the improbable, or from a "hunch," rather than from the development of a set project. Although the universities have no monopoly of this type of research, they are favorably situated to pursue it. Research institutes should also engage in it.

It is essential for the research worker to follow the truth, wherever his investigations lead him, and the universities should have sufficient funds, not only for teaching, but also for "uncommitted" research, otherwise the fountain from which ideas spring will dry up. Teaching without research in the universities and medical schools will not attain the highest levels. "The spirit of research is to a university what morale is to any army." If provision does not exist in the universities for a reasonable level of uncommitted research, then the central research organization should consider, as an expedient, the making of block grants to university medical faculties. Not only should all university teaching staffs engage in research as a duty, but university departments might well include senior posts devoted entirely to research. A system of interchange of teaching and research staffs between universities and between universities and research organizations is most desirable.

Apart from universities, there is a need for a central body to consider the general research policy in a particular field. Among the special functions of such a central organization would be considering research effort as a whole; considering the general scientific policy and needs of the country; acting as a clearing house of information; dealing with nationwide problems and socially urgent questions; supporting research in nonuniversity institutions; and keeping the research worker aware of the broader context in which his work is proceeding. The machinery through which a central organization could act is manifold. It could give grants for special purposes either to individual workers or to universities, and it could support research outside the universities. It could support new subjects at a stage when a university might not be justified in setting up a special department as part of its permanent structure. The members of the central organization must themselves have shown ability in research, and the scientists of the country should have an effective voice in recommending persons for appointment to the organization. Close integration between the research organization and the university should be preserved and extended. Special research institutes should be located close to the universities, so that the workers in both could meet, but integration should be more than geographical; there should be free interchange of staff between the two. Salaries and conditions of service in the two should be correlated to facilitate this.

After a discussion on careers in medical research, it was concluded that a research grant, even extending over several years, is not a proper way to support a research worker. This is satisfactory for recruits during a trial period, but the more senior worker wants some security. For those who have passed the trial period, contracts for five or more years are appropriate; but by the age of 35 to 40 years the decision whether or not to give permanent employment should be taken. Recruitment is normally done through the universities and medical schools, although nonmedical graduates and possibly technicians should be encouraged. The medical student would benefit from extra training in the basic sciences, and the nonmedical student would need training in biology. Financial support for such further training is essential. After these preliminaries the best training in research is to work with a master of research. A common problem, both for the universities and for research organizations, is that the lengthy medical curriculum is tending to stock the preclinical field with workers who are only familiar with the normal. This is to be deplored, as study of the abnormal has thrown much light on the normal. It was suggested that degrees in medical sciences for nonmedically qualified workers be given, a scheme that would insure at least some knowledge of the paraclinical subjects such as pathology. Medical research has become so complex that collaboration is indispensable; it is required between different disciplines in the same research field and between workers in the same field. The day of the isolated "back room" scientist in medical research is practically over. To encourage collaboration and discussion there should be facilities for travel abroad and frequent exchange of staff. Collaborative studies between research workers with similar interests have led to the most rapid advances in medicine.

Review of General Practice.—At the annual meeting of the Executive Council's Association held at Southport in October, Sir Henry Cohen of Liverpool and Mr. Iain Macleod, the Minister of Health, reviewed some of the changes in general practice in the six years of the National Health Service. Sir Henry discussed some of the recommendations of the Central Health Services Council's Committee on General Practice, of which he is chairman. In view of the rapid and increased specialization in medicine, the committee was called on to consider the range of service of the general practitioner. Some argued that he was no longer necessary, but the committee considered that he was an integral part of the health service, which depended on the proper recognition of his role. Sir Henry said that the general practitioner must have continuing responsibility for the health of his patients. He must be their guide, philosopher, and friend. Most practitioners in the National Health Service accept that interpretation of their responsibility. The committee believed

that the real advantages of the functional integration of the general practitioner lay in group practice, although single practice must continue, because there are always those who prefer working alone. Group practice gives adequate leisure for recreation and study, and a group may pool its resources of knowledge, services, and equipment. With group practice the service of general practitioners in hospitals would be more practicable.

Sir Henry said that his committee had been criticized for not advocating health centers. The two are not mutually exclusive, but the difficulties in the way of providing health centers are enormous. They are costly to build and might be miles from some patient's home. Physicians must remember that they are under contract with the National Health Service, for which they are paid public money, and there must be somebody who has the responsibility to the public of ensuring that the money has been properly spent. Sir Henry justified his committee's decision to uphold the Ministry of Health's ruling that private patients were not entitled to free drugs and dressings under the National Health Service. He said that the patient must accept or reject the general medical service as a whole when he becomes a private patient, and he must pay for both medical service and drugs. If you send your son to a private school, such as Eton, you do not expect the local education authority to pay for his school books, although you pay for his fees. The increase in cost of many recently introduced remedies is such that, sooner or later, unless the patient was allowed to have them as part of the service, private practice will disappear. Sir Henry said his committee took the line it did because, if patients who paid their physician privately were allowed to have drugs free under the National Health Service, two standards of general practice, with all the disadvantages thereof, would be created.

The Minister of Health said that during the six years under the National Health Service the most notable improvements were a reduction in the size of larger patient lists, resulting in more even distribution of patients; attraction of physicians to areas hitherto poorly served; encouragement of partnership among physicians; and stimulation of group practice. The maximum number of patients per physician has been reduced from 4,000 to 3,500, and the average number is now 2,300. In 1953 there was an unprecedented increase in physicians in general practice, about three times that occurring in the earlier years of the service. Competition for vacancies in general practice in attractive areas has become more intense, it being common to have 50 to 60 applications for one vacancy in the South. The Minister's advice to young general practitioners is "Go North, young man," i. e., away from London. Although the average age of the population of Britain is said to be increasing, the average age of general practitioners is diminishing; nearly half the physicians in the Health Service are under 45 years of age. The Minister said that he is gratified that 10% of practitioners are taking postgraduate refresher courses, and he also expressed his appreciation of the way the College of General Practitioners is developing. One pressing problem is to devise a means of restoring the mobility of physicians who tended to remain in one area indefinitely now that the buying and selling of practices has disappeared. The Minister stated, "We do not want a doctor to feel that if he takes a practice in an industrial area, or indeed in any other area, he is virtually bound to remain there for the rest of his life. Such a situation would not be in the best interests of the Service." The Minister said that the growth of partnerships is proceeding quickly, about 45% of all practices now being partnerships. It is difficult to explain why the proportion is much lower in urban than in rural and semirural areas, where it has reached 70%. A large sum has been set aside to stimulate group practice.

Mr. Macleod said that the discovery and production of some of the new wonder drugs is offset by the crippling cost of a mass of drugs that most physicians would agree are largely unnecessary. He commented, "We have fallen into a bad national habit of persistent medicine taking. . . . New drugs now make it possible to treat effectively a vast number of diseases, and there are no longer anything like the same long periods of ill health following a serious illness. But good health is a positive, not merely a passive, state. And are not the real invalids among us still greatly outnumbered by those who habitually regard themselves as not quite well but who resort to the bottle of medicine instead of getting down to the real cause of the trouble?"

Disposal of Radioactive Waste.—Authorization has been given by the Minister of Housing and Local Government under the Atomic Energy Authority Act, 1954, for the disposal of solid wastes from Harwell into four disused mines in the Forest of Dean. The waste is to consist only of apparatus, fittings, and containers having a level of activity comparable with that normally dealt with in low-level laboratories. The authorization requires that the authority should monitor streams and other sources of water in the neighborhood. As miners are working seams of coal under the bottom of these mines, and as the three local authorities of the area obtain their drinking water from springs and wells around the coal basin, it is not surprising that considerable local concern should be expressed both for the safety of the miners and the water supplies of the area. A conference of local authorities and other bodies was held. Sir John Cockcroft, Dr. T. Robertson, and other research workers addressed a meeting of local representatives. Sir John said that the radioactive effluent from Harwell is discharged with complete safety into the River Thames, and explained that radioactive gases are discharged into the atmosphere from chimney stacks. Some wastes are stored indefinitely in safe containers at Harwell and others dealt with by sea disposal, the most highly active being submerged over the Atlantic shelf. Sir John emphasized that the waste comprises only apparatus, fittings, and containers having a level of activity comparable with that dealt with in low-level laboratories and contains no highly active material. He said that about 60 truck loads had accumulated, and this would be followed by one or two loads per week. The total activity of the waste is small and a hundred times less than that already present naturally in the top 50 yards of soil in the central basin of the coalfield. Operations would be controlled by monitoring, so that the activity in the water in the basin would not be raised above the internationally accepted drinking-water tolerance. This tolerance is based on the assumption that 2 quarts of this water are drunk every day for 70 years. Even if the water percolates to the working pits or to the lower series from which drinking water is drawn, both of which are most unlikely, no harm would result. One of Sir John's team said that a concentration safe for miners to come in contact with would be 1,000 times higher than that which is safe for drinking.

Dr. T. Robertson explained that the pits in question are in the central basin of the coalfield, and this contains a large quantity of static water that does not leak into the lower and outer part of the basin because there is a thick layer of impervious Pennant sandstone between the two. The public health aspects of this dumping appear to be covered. The radioactivity of the waste has to be seen in perspective against the ever-present natural radioactivity, yet there are bound to be misgivings lest an error be made and material of higher activity finds its way into the dump, especially in view of the extreme persistence of this type of pollution. The Forest of Dean was a depressed area in the 1930's and an active development association has coaxed industry into it to compensate for the gradual dwindling of the labor employed in the mines. It is not surprising, therefore, that there should be a strong local objection to allowing the area to become known as a national dump for material that is popularly regarded as dangerous, however small the real hazard.

Health Costs Reduced.—The National Health Service expects to have saved about 84 million dollars on the costs of its medical, pharmaceutical, dental, and ophthalmic services in the last year. Administrative costs have been reduced to about 12 cents per person. These reductions are in part due to the fact that in 1952-1953 many back payments were made to physicians under the Danckwerts arbitration award, which increased pay. Payments by patients for medicines, appliances, eyeglasses, and dental treatment also reduced the cost to the government.

Women's Views on Cancer.—Drs. Ralston Paterson and Jean Aitken-Swan of the Christie Hospital and Holt Radium Institute, Manchester, have conducted a survey of women's opinions on cancer (*Lancet* **2**:857, 1954). The inquiry followed an investigation into the causes of delay in seeking advice among hospital patients and was designed to test the opinions of women who were not yet personally involved. The women's opinions on the curability and value of treatment and their knowledge of main symptoms of cancer of the breast and cervix uteri were obtained.

The names of 1,200 women, over 21 years of age and belonging to three social classes, were systematically selected from a list of voters in the Manchester region. No special cancer campaign had been conducted in this area before, and the women were interviewed at home by means of a questionnaire. They were given no clue to the reason for the survey until the end of the interview, and the questions were designed to disguise any emphasis on cancer. An outstanding finding was the high proportion of women (50%) who believe that cancer is always incurable. The proportion is higher as social class declines. In the United States popular belief that cancer is curable is much higher, and 65% of those questioned in a 1953 survey by the American Institute of Public Opinion considered that cancer is curable. In the English survey, 57% of the women thought that treatment increases the chance of cure, and 29% thought that treatment made no difference. It is surprising that 23% of them had not personally known anyone suffering from the disease; 71% had no personal knowledge of anyone who had been cured of cancer. When questioned on the site of cancer in the body, the breast and the uterus were believed to be the most common site in women. A painless lump in the breast was known to be a symptom of cancer by 79%, and most of these knew that it is a first symptom. There was, however, much more ignorance of the symptoms of cancer of the uterus, particularly in those of the lower social class. Only 24% associated a discharge of blood 10 years after the menopause with cancer; 46% either did not know the significance of the bleeding or had never heard of such a thing. Most women thought cancer was due to trauma or a fall, and 46% said they did not know its cause; 42% had had one or more blood relations who had cancer. Ignorance about the nature and purpose of the treatment of cancer was profound, and there was a surprising amount of prejudice attributing its cause to some moral element, such as bad living, drinking, smoking, or dirt. This may in part explain the element of shame with which many of the women tended to associate cancer. On the vexing question of whether a physician should tell a patient she has cancer, opinion was almost evenly split. Half of more than 1,000 patients from the same area delayed seeking advice on what they suspected to be cancer of the breast for three months or more, and 21% delayed for a year or more, after first noticing symptoms. This survey shows the need for further education on cancer in Britain.

Smoking as Cause of Cancer Challenged.—The significance of earlier findings regarding the relationship of cigarette smoking and lung cancer is questioned by Prof. Sidney Russ, physicist and radiologist, in the *British Medical Journal*. He asks, "If cigarette smoking is responsible for the majority of deaths from lung cancer, how is it that people in the United States, who smoke 30 per cent more cigarettes than we do, show a death rate for lung cancer less than half that of ours?" Prof. Russ's comments deal with the results of an investigation by Dr. Richard Doll and Prof. A. Bradford Hill, whose report appeared in the *British Medical Journal* on Dec. 13, 1952. He argues that their results do not support the conclusion that cigarette smoking causes cancer. A strictly impartial comment, he suggests, would be that "there is a higher percentage of heavy smokers among the cancer men than among the controls. Cause and effect are not always easily distinguishable. If an inquiry showed that men with cancer of the stomach took more alcohol than their controls it would be quite rational to look upon a little excess of alcohol as the effect and not the cause of the disease: it might be like this with smoking."

Quoting statistics from the Doll and Hill report, he says, "If as an example we select the 10-cigarette-per-day man, for every lung cancer man there are about 200 similar smokers without cancer. Are we to conclude that if the one man in several hundreds who gets lung cancer smokes 10 cigarettes a day as do the others, then smoking has caused the lung cancer? It is possibly true, but is not the long arm of causation being unduly stretched in maintaining the same position for all and every grade of cigarette-smoking?" He then refers to the 40-cigarette-a-day man: "To get a proper perspective, it must be remembered that the control non-cancer man is one out of about 100 who could serve as controls . . . it is one very heavy smoker who gets lung cancer as against 100 similar smokers who do not."

Declaring that there is no simple relationship between the death rate from lung cancer and the degree of cigarette smoking, he says, "The people of the United States are the largest per person cigarette-smoking people in the world, yet their lung-cancer death rate is about the same as that of the people of Switzerland and Denmark. They smoke about one-half of the quota of Americans. It is to be accepted as a fact that people in England and Wales with lung cancer do on the whole smoke more cigarettes than control people of the same age group. But the fact that as we go from one country to another, no relationship exists between cancer death rates and the degree of cigarette-smoking seems to point to something quite significant: surely there must be some other factor at work."

Unemployment of Interns.—The Medical Act of 1950, which came into force in January, 1953, stipulated that after passing his final examinations a medical student must serve for a year as an intern at a recognized hospital before he can be put on the medical register. Before the act came into operation the General Medical Council prepared a list of approved hospitals throughout the country, and on paper at any rate it looked as if there were sufficient internships in medicine, surgery, and obstetrics to satisfy the numbers of medical students being trained. It was impossible to foretell human preferences in selection and in what proportions interns would select appointments in medicine, surgery, or obstetrics. After passing their final examinations, students are responsible for finding their own appointments and exercise their own choice, both geographically and medically. Although it is too early for the scheme, barely two years old, to be working smoothly, there is evidence that there is a disturbing amount of unemployment among recently qualified physicians. Although in theory the medical student can be registered to practice a year after passing his final examination, the average time taken to work out this "year" is 15 to 18 months. Delays occur before starting and in between taking up appointments, during which time the potential physician is not earning money. One reason for unemployment in this period of the prospective physician's life is his freedom of choice. Some appointments and hospitals, particularly those in towns with large medical centers, are more in demand than others, and competition for medical and obstetric appointments is greater than for those in surgery. Appointments are equally distributed between each branch of medicine. Hospitals also prefer a fully registered physician to a medical student who has not done his internship, although in theory they agree to take the student straight from medical school.

Another Health Center.—The new permanent health center being built at Cheltenham will serve a population of about 17,000, according to the *British Medical Journal* of Sept. 25. The plan for the center resulted from applications received by the borough council in 1950 from local medical practitioners who wanted to build offices in the new housing development. On consultation with the Cheltenham General Practitioners' Association it was decided that it would be preferable for the local health authority to provide such accommodation to enable any physician in the town to make use of it if he wished. It will not provide the main accommodation for physicians who will retain their principal offices in other parts of the town. Sixteen of 41 physicians on the National Health Service list wished to have offices in the new development, and provision is therefore to be made in the center for them. They have agreed to form themselves into four groups, each group occupying one suite of rooms, which will comprise waiting room, examination room, and consultation room. The health center will also include a child welfare center, whose medical officer will be chosen by the child welfare center voluntary committee from among the general practitioners using the center. It will also be possible to hold an antenatal clinic for mothers living in the development, the main antenatal clinic being held at the maternity hospital.

Hospitals Left Vacant.—Health Service expenditure has been criticized by the House of Commons Public Accounts Committee. It was found that of 31 hospitals bought by hospital boards, 14 had been unused for two years and 9 for 12 months. Five of the 14 are now being sold. The Ministry of Health did not consider it could excuse or defend the actions of the boards and

thought they should have been discovered earlier, the committee report stated. It was satisfied that stricter central control as suggested by the Treasury was essential. Other criticisms of Health Service affairs were: 1. Allowances to druggists to cover risks of unpaid charges on prescriptions, estimated at $476,000 a year, had been unjustifiably paid without the production of sufficient evidence to judge actual losses. For the same ingredients, Scottish druggists were paid more on the average than English druggists and appreciably more than the arbitration award of 25% over the cost of ingredients. Scottish druggists received about 4½ cents for 6 oz. of chloroform water, which cost less than one cent. 2. There was a continued failure by some hospitals to prepare and maintain inventories, although appreciable losses of bedding and linen had occurred. The report recommends that the Treasury should see that real and substantial progress was made in ascertaining that payments for goods for the health services were not more than fair and reasonable.

Freer Movement for Physicians.—The Medical Practices Committee in its recent report to the Minister of Health expressed concern about the restrictive effects of the National Health Service Act on the movement of general practitioners from one area to another. The committee thought that this was one reason for the scarcity of applicants for practice vacancies in industrial areas. Physicians believe that once appointed to an industrial practice they will have to remain in it for the rest of their professional lives. "It has become clear," the committee reports, "that there is a real foundation for the fear in the minds of doctors that one of the effects of the Act would be to obstruct what formerly had been comparatively easily achieved by the operation of sale and purchase." Furthermore, the exchange of practices scheme has not worked well. The Medical Practices Committee has now writteen to all executive councils suggesting that in considering applicants for advertised vacancies they should not rule out, as many do at present, applicants already in an established practice—even in a partnership—in another area if, by appointing such an applicant, who has a practice to offer in exchange, a further vacancy would be created in the other area. The committee hopes that if executive councils follow this suggestion it will to some extent increase the opportunities for movement from one area to another, and that this loosening of the knots will encourage more physicians to apply more willingly for vacancies in the less attractive places.

Reduced Budget Holds Up Operations.—Because an extra wage allocation is needed to pay 12 more nurses, an operating room at St. Mary's Hospital, Portsmouth, cannot be used. Of the 4,000 people on Portsmouth hospital management committee's waiting list, a third are surgical patients, and the number is increasing. Twin operating rooms, costing $140,000, were opened two months ago at St. Mary's to supplement one in use. The old operating room now lies idle. Six graduate nurses and six student nurses are needed. The chairman of the management committee said, "The position is ludicrous. For the sake of a few thousand pounds, we are no better off. Although we have applied to the Ministry of Health for an additional allocation to pay extra staff we have heard nothing." Mr. Eric Hurst, group secretary, said that their allocation was cut by $84,000 at the beginning of the year. "Two-thirds of our income goes on wages and we had to cut down," he stated. A Ministry of Health spokesman said, "As far as we can trace, we have had no application for an extra allocation of money. We would normally expect it to come through the South West Metropolitan Regional Hospital Board." Allocations were made to regional boards, which made allowances to management committees.

Death from Transfusion.—A 20-year-old girl under treatment for advanced bilateral pulmonary tuberculosis underwent a lobectomy on Sept. 20, 1954, and during and just after the operation 1,000 cc. of blood and 500 cc. of dextran were administered. Five days later another transfusion was started. After 30 cc. of blood had been run into her vein a severe reaction occurred, with sweating, shivering, abdominal pain, and cyanosis. The transfusion was stopped, but within 10 minutes the patient became unconscious. She regained consciousness five minutes later, but her blood pressure fell, and she died 22 hours later. At the inquest the pathologist stated that the immediate cause of death was peripheral circulatory failure due to the administration of infected blood. The senior medical officer of the hospital said that after the collapse of the patient it was found that she had received infected blood, in which numerous gram-negative encapsulated bacilli were found. When this was discovered, chlortetracycline and oxytetracycline therapy was given, but treatment was ineffective. The blood was infected before it reached the hospital. In the opinion of the pathologist, the infected blood accelerated death, although the patient was seriously ill from pulmonary tuberculosis. The death was judged to be accidental.

British and American Students.—Dr. Martha Vidor, at the meeting of the British Association for the Advancement of Science held recently at Oxford, told of a personality test she developed to discover the differences in attitudes between British and American university students. Liverpool University sophomores and University of Minnesota students of similar age were given 550 questions. The Liverpool students emerged as more individualistic and defiant of authority. For this they paid in more loneliness and nervous strain. More Liverpool students than Minnesota students (1) disliked their fathers and criticized their families, (2) objected to school and played truant, (3) had strong political opinions, and (4) were frank about sex and flirted. The one topic on which Minnesota students felt more strongly was that women should not smoke.

Spastic Paralysis.—A five year research program is to be launched by the National Spastics Society to fight cerebral palsy, which affects 30,000 people in Britain. A sum of $126,000 will be devoted initially to the plan. Dr. P. E. Polani has been appointed research physician. His salary will be $2,100 a year. Work will be along two lines: (1) an inquiry into the treatment already available in Britain and abroad; and (2) research to discover the causes of the affliction and its prevention.

SWITZERLAND

Snakebite.—According to estimates by Swaroop and Grab published in the *Bulletin of the World Health Organization* (vol. 10, no. 1, 1954), the total number of deaths from snakebite in the world (excluding China, the U. S. S. R., and Central Europe) is estimated to be between 30,000 and 40,000 annually. Although this study was undertaken in order to assess the need for international standardization of antivenin, only a fraction of the deaths from snakebite are officially registered. In many areas the only information available is that relating to patients treated in hospitals or dispensaries, and then only if the victim lives long enough to reach the hospital. Furthermore, statistics for several countries, parts of which are known to have poisonous snakes, are entirely lacking. Asia suffers most from snakes, with 25,000 to 35,000 deaths a year; next comes South America, with 3,000 to 4,000; North America (including Mexico), with 300 to 500; Europe, with about 50; and Oceania, with about 10. Not even an approximate estimate is possible for Africa, but deaths from snakebite are presumed to range between 400 and 1,000 a year. In areas where people walk barefooted, the chance of snakebite is greater than in other regions equally infested with poisonous snakes but where people's limbs are well protected.

Mass BCG Vaccination.—A record of the largest vaccination campaign ever undertaken is now available covering mass BCG vaccination against tuberculosis in 23 countries. Nearly 30 million persons were tested with tuberculin, and almost 14 million of them received BCG vaccination. The statistics were collected and analyzed by the Tuberculosis Research Office of the World Health Organization in Copenhagen. Publication of all the reports concerning the mass campaigns conducted from 1948 to 1951 is now complete and represents an important step in the systematic and carefully controlled investigation of BCG vaccine and vaccination undertaken by WHO. Since June, 1951, the work of the International Tuberculosis Campaign has been officially turned over to the World Health Organization and the United Nations Children's Fund (UNICEF). The campaign has now spread to 30 other countries, where tuberculin tests have been performed on 90 million people, of whom 36 million have received BCG vaccination.

CORRESPONDENCE

CLINICAL THERMOMETERS AND URINOMETERS

To the Editor:—In reference to the article by Drs. Dimond and Andrews on the accuracy of clinical thermometers and urinometers, in THE JOURNAL for Sept. 11, 1954, page 125, we do not believe that their results are representative. With reference to clinical thermometers, the state law in Connecticut requires that the bureau of laboratories of the state department of health test representative samples of the products of each manufacturer who sells thermometers in the state. Permissible tolerances are ±0.2 F at 98 F, ±0.2 F at 102 F, and ±0.3 F at 106 F. In 1951, the last year for which published figures are available, only 2.1% of 34,161 thermometers tested were rejected for reasons that impaired the reliability of the instruments. When this is compared with about 65% exceeding 0.2 F tolerance at a single temperature, the figure derived from the chart in Dr. Dimond's article, the discrepancy seems incredible. Concerning urinometers, our hospital purchases Vogel urinometers (A. H. Thomas catalogue no. 3518), calibrated by the manufacturer at 60 F from 1.000 to 1.025 and 1.025 to 1.050, respectively, with a tolerance of ±0.002. We have retested these ourselves sporadically for three years and have never found one more than 0.001 in error. Parenthetically, many errors in reporting specific gravity of urine arise from a failure to allow for the effects of temperature on the urine. For example, if a urine sample of true specific gravity 1.018 at 15 C is examined at a refrigerator temperature of 0 C, the apparent reading will be 1.023; the apparent reading in a warm room (27 C) will be 1.014. To avoid this error we allow all specimens to reach room temperature for one hour, then correct for the observed laboratory temperature on the basis of a prepared chart.

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SERUM PROTHROMBIN CONSUMPTION TEST

To the Editor:—The article of Sussman, Cohen, and Gittler (*J. A. M. A.* **156:**702 [Oct. 16] 1954) entitled "Clinical Application of Simplified Serum Prothrombin Consumption Test" has as its opening statement: "The serum prothrombin consumption test, described by Quick, has not been commonly used because of its complicated technique." I am inclined to question whether that is the reason for the slow acceptance of the test. It is much more likely that a better explanation can be found in the inertia with which any new ideas and methods are accepted and recognized, irrespective of their value and significance. My prothrombin time test shared the same fate in the early years, but, with the discovery of vitamin K and the isolation of bishydroxycoumarin (Dicumarol) from spoiled sweet clover hay, recognition of its value in clinical medicine was not long delayed.

In regard to the complexity of my prothrombin consumption time test, it should be pointed out that the technique used by Sussman, Cohen, and Gittler differs from my original method only in two essential details: (1) they allow blood to clot at room temperature and then incubate the clot at 37 C for one hour before obtaining the serum, whereas I clot the blood at 37 C and centrifuge one tube at 15 and the second tube at 30 minutes and reincubate; (2) they use fibrinogen in determining the prothrombin time of the serum, while I use deprothrombinized rabbit plasma (which, incidentally, is exceedingly simple to prepare and also is available commercially). Before discussing these differences, it should be emphasized that the test was devised primarily to diagnose hemophilia, especially the very mild type in which the clotting time is apt to be normal. To detect these mild cases, centrifuging one tube at 15 and a second at 30 minutes was found necessary, since the tube centrifuged at one hour after clotting often gave a false positive result. Since labile factor, like prothrombin and fibrinogen, is consumed in clotting, it is necessary to replace this factor as well as the fibrinogen to get a reliable determination of prothrombin in serum. By using deprothrombinized rabbit plasma, an excess of both labile factor and fibrinogen is supplied. Even with meticulous technique, the prothrombin consumption time test may give equivocal results in very mild cases of hemophilia. The thromboplastinogen activity time test that my associates and I (*J. Lab. & Clin. Med.* **39:**142, 1952) have developed gives more dependable results in these cases. Sussman, Cohen, and Gittler state that their test has not been tried in parahemophilia (labile factor deficiency) and fibrinogenopenia. In 1950, Stefanini and I (*Am. J. Physiol.* **160:**572, 1950) showed that the consumption of prothrombin was very low when labile factor was lacking, and I reported (Physiology and Pathology of Hemostasis, Philadelphia, Lea & Febiger, 1951, p. 145) that prothrombin consumption in afibrinogenemia was the same as in normal blood except that it was more rapid because the removal of thrombin by fibrin did not occur. Recently we have obtained results showing that marked reduction of stable factor (factor VII) does not inhibit the consumption of prothrombin. In conclusion, the prothrombin consumption test is valuable, for, as Sussman, Cohen, and Gittler state, "it provides a single means for measuring the thromboplastin activity of the blood." To obtains its maximum diagnostic precision, modifications with the aim of simplification must be eschewed if, thereby, its accuracy is impaired.

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MISUSED EXPRESSIONS

To the Editor:—I was glad to hear Dr. Meyer's voice crying in the wilderness and his appeal for better grammar in medical reports (THE JOURNAL, Sept. 18, 1954, page 274). In my experience of five years with medical records, I have come across some very interesting expressions that, if taken literally, would prove quite embarrassing to patient and physician. Following are a few of the gems in my collection:

"Patient was discharged to be dressed in the office."
"The child was placed in a vaporizer."
"She delivered twins at 6 months of age."
"The patient was placed on a bland diet and milk and cream in bed."
"The patient's mother's sister was paralyzed on the right side, and can't talk in New Hampshire."
"Her parents were divorced at the age of 5."
"The patient was discharged urinating freely."
"The patient was discharged to be followed closely by her local doctor."

Need I say more?

MARY JANE MCLEAN
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To the Editor:—I congratulate Dr. Herman F. Meyer for calling attention to misused expressions (*J. A. M. A.* **156:**274 [Sept. 18] 1954). The statement "Inanimate subjects cannot have active verbs" has many exceptions. I name a few. The wind blows, rain falls, waves roll in, clouds rise, darkness recedes, shadows fade, night vanishes, light appears, day begins, the sun shines, the mercury rises. Incorrect usage irritates.

May I call attention to the following points? 1. The position of words in a sentence is important. In an article adjoining Dr. Meyer's appears the phrase, "my observations also prove." The position of the word "also" determines the meaning as "others' observations prove, and mine also prove." The words "my observations prove also" would express what the author probably intended to say. 2. Ambiguity occurs less frequently when short sentences are used. On page 224 of the same issue of THE JOURNAL appears a sentence of 110 words containing 11 verbs. The usage is correct but fatiguing to the reader. 3. "Which" is a pro-(for)noun. It stands for a noun and refers to a noun, never to a clause. On page 274 again, the author does not mean what he says, namely, that recurrent attacks of erysipelas clarify an

assumption. A new sentence with the words " this fact" replacing the word "which" would correctly express the author's intended meaning.

THE JOURNAL is read during spare moments. The reader is often tired when he reads. Our English should be like our food, easily digested.

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To the Editor:—With one exception I heartily agree with Dr. Herman F. Meyer in his letter on page 274 of THE JOURNAL, Sept. 18, 1954, under the caption "Misused Expressions." Dr. Meyer objects to the terms "*bluish* gray" or "*reddish* brown." Dr. Meyer is almost certainly aware of the facts that pure colors are rare, that color can be accurately described only on the basis of spectrum absorption, and that many persons have defective color vision. Most colors are mixtures of primary colors, and shades of color are of infinite variety. Gray is a mixture of white and black. If a light or medium gray also has enough blue in it to be noticeable the shade would most certainly be bluish gray. "Bluish" is defined by Webster as "somewhat blue." If the blue were very noticeable the term blue-gray would be preferable, bluish suggesting a fainter degree of blue in the gray. Brown is defined by Webster and other authorities as "any color of a group averaging red-yellow in hue, of low saturation and low brilliance." Therefore, it is a very variable color. A brown with a noticeable tinge of red would be reddish brown. Webster defines "reddish" as "somewhat red; tinged with red." Green is a mixture of blue and yellow. If the blue is noticeably in excess the color would be blue-green, but if just enough excess blue is present to give a faint tinge of blue the color could be correctly called bluish green. In other words, bluish, reddish, yellowish, etc., represent shades of meaning. Color being such a variable characteristic, I cannot accept Dr. Meyer's criticism.

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To the Editor:—I was interested in Dr. Herman F. Meyer's letter to the Editor entitled "Misused Expressions" in THE JOURNAL for Sept. 18, 1954, page 274. I asked Mr. L. T. Lukaszewski, the editorial assistant of the Audio-Digest Foundation, sponsored by the California Medical Association, for his opinion. I believe his response would be interesting to your readers:

Dr. Meyer's comments on correct medical phraseology may arouse more sympathy than agreement among those who study the examples he gives. There is good reason for the application of animate verbs to inanimate objects. Why cannot a roentgenogram *show* a condition as well as a roentgenographer can? How do you *show* something, except to let it be seen? Active in form, such a word is passive in sense. Other words like "revealed" and "demonstrated" are pardonable, since they help to avoid clumsy circumlocutions such as "The laboratory technician reported, on examination of the test, that he had observed . . ."

Dr. Meyer suggests, "On roentgenograms there were . . ." What? Shadows, lights, and water stains, but not obstruction, calcification, or anything else of clinical interest. These conditions were present in the patient regardless of roentgenography or any other diagnostic process, and regardless of whether it *showed* them. But the permissible extension of a verb to the inanimate subject is far different from such reckless statements (everyone has his pet) as "The patient exhibited pale feces" or, worse still, "displayed a pale stool."

The primary sin in medical writing is metonymy, the substitution of a term for another with which it is associated. Dr. Meyer seems to fall into this error when he suggests, "The serological examination of the spinal fluid was within normal range." This means only that the examination was done in the normal manner. What Dr. Meyer means is that *results* were within the normal range.

It is difficult to believe, after study of current medical literature, that any papers are rejected merely because of such inept expressions as those Dr. Meyer discusses. But certainly these papers do not, as he words it, "receive rejection slips." The authors receive them, and they receive my sympathy too. It is not easy to say what you mean.

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APLASTIC ANEMIA AND CARBON TETRACHLORIDE

To the Editor:—I have read with considerable interest the comments by Dr. Carey P. McCord and Dr. Rutherford T. Johnstone in THE JOURNAL for Sept. 11, 1954, page 194, on my paper entitled "Aplastic Anemia Following Exposure to Carbon Tetrachloride" (*J. A. M. A.* **155:**737 [June 19] 1954). Both of your correspondents raise some question as to the relationship of the carbon tetrachloride and the observed bone marrow damage. I believe they are justified in regarding the causal association as unproved. Indeed, the tentative nature of my conclusions would negate the imputed "diagnostic finality" of the paper. The three cases cited hardly represent a controlled experiment, and confirmation is needed. It is significant that, in the cases reported, the first patient also had severe, overt damage to the liver from which recovery took place and the second patient showed some damage to the liver on postmortem examination. Careful questioning of the patients and their relatives failed to adduce any history of exposure to aromatic hydrocarbons such as benzene. In the two cases in which such inquiry was possible, attempts to obtain information from the concerns that employed the patients failed to receive any cooperation.

Contrary to the impression given by your correspondents, effects on the blood are not unknown in carbon tetrachloride poisoning, although aplastic anemia has not been previously reported. Limitations of space necessitated deletion of a number of references in my paper as originally submitted. In addition to Browning's case cited by Dr. McCord, Goodman and Gilman (The Pharmacological Basis of Therapeutics, New York, the MacMillan Company, 1941) state that "a severe macrocytic hyperchromic anemia may develop following subacute or chronic poisoning. This anemia differs from pernicious anemia and is attributed in part to liver damage and in part to a direct action of the chemical upon the bone marrow." Rawson, Parker, and Jackson reported a history of exposure to carbon tetrachloride in agnogenic myeloid metaplasia, a condition in which depression of the bone marrow is known to occur (*Science* **93:**541, 1941). Subconjunctival hemorrhages and bleeding from mucous membranes are widely recognized as among the manifestations of intoxication with carbon tetrachloride (Cecil, R. L., and Loeb, R. F.: A Textbook of Medicine, ed. 8, Philadelphia, W. B. Saunders Company, 1951, p. 509). Other hemorrhages in various parts of the body are not uncommon following exposure to this toxic agent. Eddy (*J. A. M. A.* **128:**994 [Aug. 4] 1945) reported a death on the 14th day of exposure due to pulmonary hemorrhage. Smetana (*Arch. Int. Med.* **63:**760 [April] 1939) stated that hematemesis is a not infrequent feature of carbon tetrachloride poisoning and a hemorrhagic diathesis is commonly observed. Smith (*J. Indust. Hyg. & Toxicol.* **29:**134, 1947) reported a case of hematemesis due to a duodenal ulcer that occurred following carbon tetrachloride poisoning. Hamilton and Hardy (Industrial Toxicology, ed. 2, New York, Paul B. Hoeber, Inc., 1949) state that purpura, epistaxis, and thrombopenia have been observed. In addition, a case similar to those reported in my paper was recently observed by Dr. Bernard M. Jacobsen at the Massachusetts General Hospital in a young woman whose work involved excessive exposure to carbon tetrachloride (personal communication). I am aware of the work of Adams and others (*A. M. A. Arch. Indust. Hyg.* **6:**50 [July] 1952), who conducted chronic toxicity studies with carbon tetrachloride in two monkeys who were repeatedly exposed to 100 ppm of the vapor without adverse effects. The negative examinations included microscopic study of the bone marrow, although no bone marrow differential counts were performed. However, exposure to carbon tetrachloride vapor in a concentration of 100 ppm represents only the maximum allowed in industry. It is certain that this is often exceeded in cases of human poisoning.

While none of the evidence cited is conclusive, it justifies a reiteration of the point of the paper, that carbon tetrachloride poisoning be considered as a possible etiological factor in cases of aplastic or refractory anemia.

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Postgraduate Continuation Courses for Physicians

Compiled by the Council on Medical Education and Hospitals for the Period Jan. 1, 1955, to Sept. 1, 1955

Table of Contents

Subject	Page	Subject	Page	Subject	Page
Administrative Medicine	1429	Geriatrics	1434	Pathology	1441
Alcohol Studies	1429	Hematology	1434	Pediatrics	1441
Allergy	1429	Hospital Administration	1434	Physical Medicine and Rehabilitation	1442
Anatomy	1429	Industrial Medicine	1434	Physiological Chemistry	1442
Anesthesiology	1430	Internal Medicine	1434	Physiology	1443
Arthritis	1430	Malignant Disease	1435	Poliomyelitis	1443
Atomic Casualties	1430	Medical Technology	1436	Proctology	1443
Basic Sciences	1431	Medical Writing	1436	Psychoanalytic Training	1443
Cardiovascular Disease	1431	Medicine, General	1436	Public Health	1444
Dermatology and Syphilology	1431	Microbiology	1437	Pulmonary Disease	1444
Diabetes	1432	Neurological Surgery	1437	Radiology	1444
Electrocardiography	1432	Neurology and Psychiatry	1438	Surgery	1445
Electroencephalography	1433	Obstetrics and Gynecology	1438	Urology	1446
Endocrinology	1433	Occupational Medicine	1439	Venereal Disease	1446
Endoscopy	1433	Ophthalmology and Otolaryngology	1439	Sponsoring and Contributing Agencies	1447
Fractures	1433	Orthopedic Surgery	1441	Footnotes	1447
Gastroenterology	1433	Parasitology	1441		

Postgraduate Continuation Courses for Physicians—Jan. 1, 1955, to Sept. 1, 1955

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ADMINISTRATIVE MEDICINE			
Columbia University School of Public Health, 600 W. 168th St., New York 32	Master of Science in Administrative Medicine	September, 21 months, full time	$1,045.60
ALCOHOL STUDIES			
Yale University, Center of Alcohol Studies, 52 Hillhouse Ave., New Haven, Conn.	Summer School of Alcohol Studies	June 27-July 22, full time	[59]
ALLERGY			
Baltimore City Medical Society, 1211 Cathedral St., Baltimore 1 [135]	Postgraduate Refresher Course	March 3-30, once weekly, part time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Allergy and Related Conditions	March 23, 10 days, part time	125.00
	Personal Course in Allergy	Arranged, 6 months, first of every month, full time	500.00
	Personal Course in Allergy	Arranged, 6 months, first of every month, full time	200.00
American College of Allergists, Inc., 401 LaSalle Medical Bldg., Minneapolis 2 At: Morrison Hotel, Chicago, Ill.	11th Annual Graduate Instructional Course in Allergy	April 25-27, full time	50.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Allergy and Chest Diseases for General Physicians	April 18-20, full time	25.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1] At: Beth-El Hospital	Allergy	April, 10 weeks, part time	30.00
University of Buffalo School of Medicine, 3435 Main St., Buffalo 14	Allergy	March 2-3, full time	25.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Allergy (dm 1096)	Arranged, 2 months, full time	50.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Allergy	Arranged, twice weekly, part time	50.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	5416-A Refresher Course in Allergic Conditions	March 14-16, full time	50.00
	543-A Allergy	April 15-June 3, part time	40.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13 At: Montefiore Hospital	Allergy in Practice	May 9-13, full time	50.00
American Academy of Allergy, 208 E. Wisconsin Ave., Milwaukee At: Roosevelt Hospital, New York Hospital, Mt. Sinai Hospital, New York	American Academy of Allergy Postgraduate Clinics	February 4-6, full time	None
ANATOMY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Surgical Anatomy: Demonstrations and Lectures	May 16-June 6, part time	100.00
Mercy Hospital, Hillcrest Dr., San Diego 3, Calif.	Applied Anatomy	September-January, 30 hours, part time	None
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Surgical Anatomy of the Thorax	April 28-May 23, part time	75.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Surgical Anatomy on the Cadaver	March 24, 10 days, part time	125.00
State University of Iowa College of Medicine, Iowa City	Advanced Human Anatomy	Time arranged	None
	Seminar in Anatomy	Weekly, 1 day, part time	Not given
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1	General Anatomy	Arranged	[60]
	Surgical Anatomy [61]	January-May, 15 weeks, part time	150.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15	Surgical Anatomy	February 28-April 22, part time	205.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor	Anatomy	February 10-May 26, once weekly, part time	65.00
Wayne University College of Medicine, 1401 Rivard Ave., Detroit	Regional Anatomy, Head and Neck	March 14-June 16, once weekly, part time	50.00
	Regional Anatomy, Thorax, Abdomen, and Pelvis	March 14-June 16, once weekly, part time	50.00
	Regional Anatomy, Back and Extremities	March 14-June 16, once weekly, part time	50.00
	Surgical Anatomy	March 14-June 16, once weekly, part time	50.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ANATOMY—Continued		
Cornell University Medical College, 1300 York Ave., New York 21	Surgical Anatomy	May 30-June 25, full time	$200.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	414-A Anatomy of the Female Pelvis	March 28-June 17, part time	90.00
	415-A Anatomy of the Genitourinary System	March 28-June 17, part time	90.00
	416-A Anatomy of the Musculoskeletal System	March 28-June 17, part time	90.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Applied Anatomy for the General Surgeon (da 1016)	Arranged, 250 hours, part time	375.00
	Anatomy of the Thorax (da 1026)	Arranged, 100 hours, part time	150.00
	Anatomy of the Abdomen (da 1036)	Arranged, 100 hours, part time	150.00
	Applied Anatomy for the Otolaryngologist (da 1046)	Arranged, 130 hours, part time	275.00
	Applied Anatomy of the Urogenital System (da 1056)	Arranged, 130 hours, part time	300.00
	Applied Anatomy for the Anesthetist (da 1066)	Arranged, 125 hours, part time	275.00
	Anatomy for the Orthopedic Surgeon (da 1076)	Arranged, 100 hours, part time	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Anatomy, Dissections, Demonstrations and Lectures	Arranged, part time	200.00
	Anatomy Course, Lectures, Demonstrations, Dissection	Arranged, 18 hours, part time	300.00
	Surgical Anatomy, Lectures, Demonstrations, Dissection	Arranged, 12 hours, part time	200.00
	Operative Surgery, Lectures, Demonstrations (Cadaver), Dissection	Arranged, 18 hours, part time	300.00
	Regional Anatomy, Lectures, Demonstrations, Dissection	Arranged, 6 hours, part time	150.00
	Surgical Anatomy	Arranged, 2 weeks, part time	300.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13	Neuroanatomy	March 14-June 11, full time	None
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland [2]	Applied Anatomy	January 20-May 5, once weekly, part time	50.00
University of Washington School of Medicine, Seattle 5	Segmental Anatomy of the Lungs	January 4-March 15, part time	None
University of Ottawa Faculty of Medicine, Corner of Nicholas and McDougall Streets, Ottawa, Ontario, Canada	Postgraduate Course in Surgical Anatomy	March 18, 20 weeks, once weekly, part time	10.00
	ANESTHESIOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Anesthesiology	Every 2 months, 4 months, full time	300.00
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33 At: Los Angeles County Hospital	892: Anesthesia	Arranged, 12 weeks, full time	300.00
St. Francis Hospital, 114 Woodland St., Hartford 5, Conn.	General and Regional Anesthesia	January 1, 1-3 months, full time	None
	General and Regional Anesthesia	July 1, 1-3 months, full time	None
American Society of Anesthesiologists, Inc., 188 W. Randolph St., Chicago 1 [62] At: Throughout the country	Anesthesiology	2 weeks, 6 months, part time and full time	None-300.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Practical Course in Endotracheal Anesthesia	Arranged, every 2 weeks, full time	150.00
	Practical Course in Spinal, Regional, and Intravenous Anesthesia	Arranged, every 2 weeks, full time	150.00
	Practical Course in Ether, Nitrous Oxide, Ethylene, and Cyclopropane Anesthesia	Arranged, first of every month, full time	200.00
	Practical Course in Nitrous Oxide and Ether Anesthesia	Arranged, first of every month, full time	125.00
University of Kansas Medical Center, Kansas City [4]	Anesthesiology	April 11-13, full time	30.00
Maine General Hospital, 22 Arsenal St., Portland, Maine	Postgraduate Course in Anesthesiology	January, every other month, part time	25.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Clinical Anesthesiology (dan 1016)	Arranged, 3 months, full time	200.00
	Anesthesiology	September, 8 months, full time	700.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Applied Anesthesiology	Arranged, January and April, 3 months, full time	300.00
	Anesthetic Techniques	Arranged, January and April, one week, full time	100.00
	Regional and Spinal Anesthesiology	Arranged, January and April, 2 weeks, full time	150.00
New York University-Bellevue Medical Center, 550 First Ave., New York	510-A Anesthesiology: Endotracheal and Related Methods	January 24-28; May 23-27, full time	75.00
	512-B Regional Anesthesiology	May 9-21, full time	200.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Recent Advances in the Pharmacology of Anesthetic Agents	March 7-9, full time	60.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13	Postgraduate Symposium on the Basic Sciences Related to Anesthesiology	June, one week full time	25.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [63]	Anesthesiology	January-May, 4 weeks, first of each month, full time	25.00
	ARTHRITIS		
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]	Arthritis	February 3, full time	5.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Arthritis and Allied Rheumatic Diseases	March 25, 10 days, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Arthritis	Arranged, 8 weeks, part time	50.00
D. T. Watson School of Physiatrics, Leetsdale, Pa.	Protective Body Mechanics in Arthritis	Arranged, 5 days, full time	10.00
Albert Einstein Medical Center, York and Tabor Roads, Philadelphia 41 At: Southern Division, Fifth and Reed Streets	Arthritis, Rheumatology, and Allied Diseases	January 26, 10 weeks, part time	50.00
	ATOMIC CASUALTIES		
Army Medical Service Graduate School, Washington 12, D. C.[64] At: Walter Reed Army Medical Center	Medical Care of Atomic Casualties	January 10-19, full time, and March 7-16, full time	None

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
BASIC SCIENCES			
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver 20	Basic Sciences	Arranged, 3 months, part time	[65]
Colby College, Waterville, Maine [127]	Basic Sciences—Ophthalmology—Lancaster	June-August, 11 weeks	Not given
University of Maryland School of Medicine, 29 S. Greene St., Baltimore	Basic Sciences as They Apply to the Practice of Medicine	September-May, 64 hours, part time	$50.00
University of South Dakota School of Medical Sciences, Vermillion	Postgraduate Basic Science Course [66]	February 1, 1 semester, full time	75.00
University of Ottawa Faculty of Medicine, Corner Nicholas and McDougall Streets, Ottawa, Ontario, Canada	Lectures in Basic Science as Applied to Clinical Medicine	October, 6 months, once monthly, part time	None
CARDIOVASCULAR DISEASE			
Los Angeles County Heart Association, 316 S. Bonnie Brae St., Los Angeles 57			
At: University of Southern California School of Medicine	Cardiac Resuscitation Course	Every week, 3 hours, full time	Not given
At: Various clinics in Los Angeles County	Postgraduate Precepteeship in Cardiology for the General Practitioner	Spring and fall, 12 weeks, part time	15.00
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33	873: Cardiac Resuscitation [6]	Once weekly, part time	30.00
At: Good Samaritan Hospital	841: Cardio-Respiratory Physiology	January 6-March 24, part time	50.00
At: Los Angeles County Hospital	832: Cardiology and Vascular Disease	July, 12 months, full time	1,000.00
California Heart Association, 1428 Bush St., San Francisco 9	Annual Scientific Session	May 20, part time	None
At: Santa Barbara			
University of California Medical Center, University Extension, San Francisco 22	Therapy of Cardiovascular Disease	January 31-February 4, part time	25.00
University of Florida Graduate School, Department of Medicine, 1625 Riverside Ave., Jacksonville 4 [131]	Seminar on Cardiology	February 17-18, full time	Not given
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Cardiovascular Diseases	March 23, 10 days, part time	100.00
Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis	Postgraduate Course in Electrocardiography—Vector Analysis	March 10, full time	None
	Postgraduate Course in Electrocardiography—General	March 7-9, full time	35.00
University of Kansas Medical Center, Kansas City [7]	Ninth Annual Heart Conference	February 10-11, full time	None
Beth Israel Hospital, 330 Brookline Ave., Boston	EKG Clinics	February 28-March 4, full time	100.00
	EKG Clinics	March-May, 10 days, part time	100.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15	Cardiology 1	January 24-May 6, full time	505.00
At: Beth Israel Hospital	Clinical Heart Disease	July 1-30, full time	205.00
At: Peter Bent Brigham Hospital			
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor			
At: University Hospital	Diseases of the Heart	March 14-18, full time	50.00
Minnesota Heart Association, 532 Endicott on 4th, St. Paul 1 [8]			
At: Ten hospitals in various sections of the state	Clinical Conferences on Heart Disease	Monthly, one day, part time	None
University of Minnesota, Center for Continuation Study, Minneapolis 14 [9]	Cardiovascular Diseases for General Physicians	March 21-23, full time	25.00
Mississippi Heart Association, 133 S. Lamar St., Jackson			
At: University of Mississippi School of Medicine	Cardiovascular Seminar	January 17-19, full time	5.00
Albany Medical College, 47 New Scotland Ave., Albany 8, N. Y.[10]	Cardiovascular Teaching Day	February 3, part time	10.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1]			
At: Coney Island Hospital	Interpretation of the Electrocardiogram	April, 10 weeks, part time	20.00
At: Beth-El Hospital	Clinical Cardiology	April, 6 weeks, part time	30.00
At: Jewish Chronic Disease Hospital	Advances in Cardiology and Electrocardiography	April, 10 weeks, part time	30.00
University of Buffalo School of Medicine, 3435 Main St., Buffalo 14	Cardiovascular Disease	January 26-27, full time	25.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32	Medicine PM 64—Recent Advances in Diagnosis and Surgical Treatment of Heart Disease	January 31-May 23, part time	150.00
At: Montefiore Hospital	Medicine PM 63—Cardiology III	February 1-May 31, part time	200.00
	Medicine PM 62—Section B—Cardiology	February 1-March 31, part time	150.00
At: Mt. Sinai Hospital	Medicine PM 31—Cardiovascular Diseases [11]	January 31-February 11, full time	140.00
	Medicine PM 48—Heart Disease and Circulatory Dynamics	February 15-April 26, part time	45.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Cardiology (dm 1046)	Arranged, 20 weeks, part time	150.00
	Physiology of the Cardio-vascular System and Blood (dph 1016)	Arranged	75.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Diagnosis and Treatment of Diseases of the Heart	Arranged, 3 weeks, part time	75.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	5427-B Auscultation of the Heart	January 31-February 2, full time	50.00
	6612-B Cardiac Arrest and Resuscitation	March 25, full time	50.00
	544-A Cardiology	April 14-June 2, part time	75.00
	5425-A Cardiology	June 27-July 22, full time	250.00
Cleveland Area Heart Society, 2073 E. Ninth St., Cleveland 15	Cardiac Resuscitation Course	Monthly,[67] 2 days, part time	[68]
At: Western Reserve University School of Medicine			
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Cardiovascular Diagnosis	January 12, 10 weeks, part time	75.00
Southwestern Medical School of the University of Texas, 2211 Oak Lawn Ave., Dallas 4	Surgical Cardiac Diseases for Internists and Thoracic Surgeons (Seminar)	February 7-9, full time	Not given
University of Tennessee Medical College, 874 Union Ave., Memphis 3	Cardiovascular Diseases	May 18-20, part time	50.00
DERMATOLOGY AND SYPHILOLOGY			
College of Medical Evangelists, 812 N. Boyle Ave., Los Angeles 33	Dermatology	January 11-April 12, once weekly, part time	40.00
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Dermatology in General Practice	February 16-March 23, part time	30.00
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver 20	Dermatology for General Practitioners	August 25-27, full time	30.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
DERMATOLOGY AND SYPHILOLOGY—Continued			
Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15	Practical Dermatology	March 24-26, full time	$40.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Dermatology	March 24, 10 days, part time	100.00
	Intensive Course in Dermatology	May 9, 2 weeks, full time	100.00
	Clinical Refresher Course in Dermatology	Arranged, 2-4 weeks, full time	[69]
	Clinical Course in Dermatology	Arranged, 1 year, full time	1,000.00
Baltimore City Medical Society, 1211 Cathedral St., Baltimore 1 [135]	Postgraduate Refresher Courses	February 2-25, once weekly, part time	None
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Massachusetts General Hospital	Dermatology and Syphilology 2	Arranged, 1-9 months, full time	[70]
Wayne University College of Medicine, 1401 Rivard St., Detroit 7 At: Receiving Hospital	Seminar	Second quarter, once weekly, part time	15.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1] At: Beth-El Hospital	Diagnosis and Treatment of Common Skin Disorders	April, 8 weeks, part time	20.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Columbia-Presbyterian Medical Center	Dermatology GM-1, Clinical Dermatology	July 1, 6-12 months, full time [71]	[72]
	Dermatology GM-1-A, Advanced Dermatology	July 1, 6-12 months, full time [71]	[72]
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Dermatology and Syphilology for the General Practitioner (Seminar)	Arranged, 5 days, full time	75.00
	Dermatology and Syphilology for the Specialist (Seminar)	Arranged, 5 days, full time	75.00
	Dermatologic Histopathology (Seminar)	Arranged, 5 days, full time	75.00
	Training for Specialization in Dermatology and Syphilology	Arranged, 3 years, part time	1,000.00
New York University-Bellevue Medical Center, 550 First Ave., New York	522-A Seminar in Dermatology and Syphilology (for Nondermatologists)	January 17-21, full time	75.00
	523-A Symposium on Dermatology and Syphilology (for Dermatologists)	May 16-20, full time	85.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Dermatology for the General Practitioner	March 15-16, full time	40.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [63]	Dermatology and Syphilology	Arranged, 2 weeks, full time	25.00
DIABETES			
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]	Diabetes	March 3, full time	5.00
American Diabetes Association, Inc., 1 E. 45th St., New York 17 At: Lankenau Hospital, Philadelphia	Diabetes and Basic Metabolic Problems	January 19-21, full time	[23]
Academy of Medicine of Cleveland, 2009 Adelbert Rd., Cleveland 6	Diabetes	January, part time	None
ELECTROCARDIOGRAPHY			
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33 At: Los Angeles County Hospital	880: Electrodiagnosis and Electromyography	Arranged, 1 month, full time	100.00
University of California Medical Center, University Extension, San Francisco 22	Advanced Electrocardiography	January 31-February 4, part time	25.00
	Electrocardiography for Beginners	January 31-February 4, part time	50.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Electrocardiography and Heart Disease	February 19, 10 days, part time	150.00
	Intensive Course in Electrocardiography and Heart Disease	March 14 and July 11, full time	150.00
	Advanced Course in Electrocardiography and Heart Disease	Arranged, 1 week, full time	125.00
Michael Reese Hospital, 29th St. and Ellis Ave., Chicago 16	Electrocardiographic Interpretation	February 2-April 20, part time	50.00
	Electrocardiographic Interpretation	August 22-September 3, full time	150.00
University of Kansas Medical Center, Kansas City [12]	Electrocardiography	March 21-24, full time	40.00
Tufts College Medical School, 136 Harrison Ave., Boston [13] At: New England Center Hospital	Electrocardiography II	January 10-12, full time	[74]
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor At: University Hospital	Electrocardiographic Diagnosis	March 21-26, full time	75.00
Wayne University College of Medicine, 1401 Rivard St., Detroit 7 At: Receiving Hospital	Electrocardiographic Conference	Second quarter, twice monthly, part time	15.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Electrocardiography for General Physicians	May 9-14, full time	40.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1] At: Jewish Chronic Disease Hospital	Clinical Ballistocardiography	April, 8 weeks, part time	20.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Mt. Sinai Hospital	Medicine PM 41—Intensive Course in Elementary Electrocardiography [11]	January 17-22, full time	60.00
	Medicine PM 42—Intensive Course in Advanced Electrocardiography [11]	January 24-29, full time	60.00
	Medicine PM 43—Spatial Vectorcardiography	March 14-19, full time	60.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Electrocardiography (dm 1056)	Arranged, 2 weeks, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Electrocardiographic Interpretation	Arranged, 2 weeks, part time	75.00
New York University-Bellevue Medical Center, 550 First Ave., New York	5423-B Electrocardiography	March 28-April 1, full time	75.00
	544-B Clinical Electrocardiography	April 14-June 2, part time	40.00
State University of New York College of Medicine, 766 Irving Ave., Syracuse 10 At: University Hospital	Advanced Electrocardiography	April and May, 8 weeks, part time	15.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ELECTROCARDIOGRAPHY—Continued			
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1 [2]	Electrocardiography	May 16-20, full time	$50.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [63]	Electrocardiology	Arranged, 2 weeks, full time	25.00
University of Vermont College of Medicine, Pearl St., College Park, Burlington	Electrocardiology Seminar	August or September, 2 days, full time	Not given
ELECTROENCEPHALOGRAPHY			
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Electroencephalography	Arranged, 2 weeks, full time	200.00
ENDOCRINOLOGY			
Highland Alameda County Hospital, 2701 14th Ave., Oakland 6, Calif.[14]	Dynamics of Endocrine Disease	February 8-13, full time	100.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor			
At: University Hospital	Metabolism and Endocrinology	March 28-April 1, full time	50.00[9]
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1]			
At: Kings County Hospital	Metabolic Endocrinology	April, 10 weeks, part time	20.00
At: Jewish Hospital	Medical and Gynecologic Endocrinology	April, 10 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Endocrinology (dm 1036)	Spring and fall, 2 weeks, full time	100.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	549-A Endocrinology	April 11-June 3, part time	40.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25			
At: M. D. Anderson Hospital and Tumor Institute	Endocrinology	January 11-February 17, part time	Not given
Laval University Faculty of Medicine, Quebec, Canada	Advanced Course in Physiological Endocrinology	24 weeks, once weekly, part time	10.00
ENDOSCOPY			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical Bronchoscopy	February 9 and April 13, 8 days, part time	150.00
	Clinical Bronchoscopy	Arranged, 1 week, first of every week, full time	100.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12	Bronchoesophagology	March or April, 2 weeks, full time	150.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Gastroscopy (dm 1066)	Arranged, 2 weeks, part time	200.00
	Gastroscopy (Advanced) (dm 1067)	Arranged, 20 hours, part time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Bronchoscopy	Arranged, 4 weeks, part time	150.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	595-A Endoscopy: Bronchoesophagology and Laryngology	February 7-18, full time	100.00
Temple University School of Medicine, 3401 N. Broad St., Philadelphia 40 [15]	Bronchoesophagology	January 31-February 11, full time	250.00
	Bronchoesophagology	February 1-12, full time	250.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia	Bronchology, Esophagology, and Laryngeal Surgery	May or June, 2 weeks, full time	250.00
FRACTURES			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Fractures	March 23, 10 days, part time	125.00
	Intensive Course in Fractures and Traumatic Surgery	March 14 and June 13, 2 weeks, full time	150.00
	Clinical Course in Fractures	Arranged, 1 week, first of every week, full time	50.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25			
At: M. D. Anderson Hospital and Tumor Institute	Fractures	March 17-19, full time	Not given
University of Tennessee Medical College, 874 Union Ave., Memphis 3	Fractures and Dislocations	April 27-29, part time	50.00
GASTROENTEROLOGY			
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33	846: Seminars in Advanced Gastroenterology	January 13-April 7, part time	50.00
Army Medical Service Graduate School, Washington 12, D. C.			
At: Walter Reed Army Medical Center	Clinical Gastroenterology and Metabology with Particular Reference to Medical Military Problems	May 9-14, full time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Gastroscopy and Gastroenterology	March 21, 2 weeks, full time	200.00
	Gastroenterology	March 23, 10 days, part time	100.00
	Intensive Course in Gastroenterology	May 16, 2 weeks, full time	100.00
	Advanced Course in Gastroscopy and Gastroenterology	September 12, 1 week, full time	150.00
University of Kansas Medical Center, Kansas City	Gastroenterology	April 14-15, full time	25.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor			
At: University Hospital	Diseases of Gastro-Intestinal Tract	April 18-22, full time	50.00
Wayne University College of Medicine, 1401 Rivard St., Detroit 7			
At: Receiving Hospital	Gastroenterologic Clinic	Second quarter, once weekly, part time	15.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Gastroenterology for General Physicians	June 6-8, full time	25.00
University of Buffalo School of Medicine, 3435 Main St., Buffalo 14	Gastroenterology	March 23-24, full time	25.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Montefiore Hospital	Medicine PM 73—Advanced Gastroenterology	January 18-May 10, part time	75.00
At: Mt. Sinai Hospital	Medicine PM 45—Intensive Course in Gastroenterology	April 18-22, full time	60.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Physiology and Chemistry of the Gastrointestinal Tract, Digestion	Arranged, 1 month, full time	150.00
	Gastroenterology (dm 1106)	Arranged, 1 month, full time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical Gastroenterology	Arranged, 6 weeks, part time	75.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
GASTROENTEROLOGY—Continued			
New York University-Bellevue Medical Center, 550 First Ave., New York 16	5411-A Gastroenterology	April 13-June 1, part time	$40.00
Medical Advancement Trust of Maumee Valley Hospital, 2025 Arlington Ave., Toledo 9, Ohio [16] At: Academy of Medicine of Toledo and Lucas County	Gastro-Intestinal	May 19-20, part time	None
Medical Society of the State of Pennsylvania, Commission on Graduate Education, 230 State St., Harrisburg [17] At: Allentown, Erie, Harrisburg, Johnstown, Pittsburgh, Wilkes-Barre, Williamsport	Pediatrics and Gastroenterology	Spring and fall, 5 weeks, part time	75
GERIATRICS			
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor	Medicine's Responsibility for Older People	January 13-15, full time	None
New York University-Bellevue Medical Center, 550 First Ave., New York 16	5426-A Geriatrics	January 26-28, full time	30.00
HEMATOLOGY			
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver 20	Clinical Hematology	July 11-15, full time	75.00
Cook County School of Medicine, 707 S. Wood St., Chicago 12	Clinical Hematology	March 23, 10 days, part time	100.00
	Hematology	June 13, 1 week, full time	100.00
University of Kansas Medical Center, Kansas City [12]	Hematology in Clinical Medicine	March 10-12, full time	30.00
Michael Reese Hospital, 29th and Ellis Ave., Chicago 16	Hematologic Diagnosis and Treatment	July 2 weeks, full time	150.00
Wayne University College of Medicine, 1401 Rivard St., Detroit 7	Advanced Hematology	Second quarter, once weekly, part time	50.00
At: Receiving Hospital	Hematology Clinic	Second quarter, once weekly, part time	15.00
	Review of Clinical Hematology	Second quarter, once weekly, part time	15.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Clinical Hematology for General Physicians and Internists	February 28-March 2, full time	25.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1] At: Jewish Hospital	Hematology	April, 8 weeks, part time	20.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Montefiore Hospital	Medicine PM 66—Clinical Hematology	February 1-June 17, part time	75.00
	Medicine PM 67—Advanced Hematology	February 8-May 24, part time	75.00
At: Mt. Sinai Hospital	Medicine PM 28—Laboratory Methods in Hematology	February 28-March 24, full time	200.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Hematology (dm 1086)	Arranged, 1 week, part time	50.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	546-A Clinical Hematology	April 12-June 2, part time	40.00
Academy of Medicine of Cleveland, 2009 Adelbert Rd., Cleveland 6	Hematology	April, part time	None
Albert Einstein Medical Center, York and Tabor Roads, Philadelphia 41 At: Southern Division, Fifth and Reed Streets	Hematology	Fall, 10 weeks, part time	75.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Bryn Mawr Hospital	Clinical and Laboratory Hematology	February and April, 6 weeks full time	220.00
HOSPITAL ADMINISTRATION			
Columbia University School of Public Health, 600 W. 168th St., New York 32	Master of Science in Hospital Administration	September, 21 months, full time	1,045.00
INDUSTRIAL MEDICINE			
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Application of Principles of Industrial Medicine to Private Practice	February 2-March 23, part time	40.00
Harvard University School of Public Health, 55 Shattuck St., Boston	Industrial Health	February 7-April 2, full time	300.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	486-A Air Pollution	February 10-May 26, part time	60.00
	484-A Medical Aspects of Compensation	May 2-7, part time	25.00
Institute of Industrial Health, University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati 19 At: Kettering Laboratory	Industrial Medicine	July 1, 12 months, full time	400.00
	Industrial Medicine [76]	July 1, 3 years, full time	[77]
Marquette University School of Medicine, 561 N. 15th St., Milwaukee 8	Industrial Medicine	March 3-April 6, once weekly, part time	25.00
INTERNAL MEDICINE			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Varicose Veins and Surgical Diseases of the Peripheral Vascular System	January 18-March 8, once weekly, part time	30.00
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Fevers of Unexplained Origin with Emphasis on Brucellosis	May, full time	Not given
	Photomicrography	February 16-March 23, part time	30.00
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33 At: Los Angeles County General Hospital	842: Recent Advances in Internal Medicine	Arranged, 6-12 weeks, part time	
	830: Internal Medicine	Arranged, 1 year, full time	1,000.00
University of California Medical Center, University Extension, San Francisco 22	Recent Advances in Internal Medicine	April 18-22, part time	Not given
Highland Alameda County Hospital, 2701 14th Ave., Oakland 6, Calif.[14]	Dynamics of Metabolic Disease	January 31-February 5, full time	100.00
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver 20 [18]	Fundamental Advances in Internal Medicine	June 13-17, full time	[78]
George Washington University School of Medicine, 1335 H St., N. W., Washington 5, D. C. At: George Washington University Hospital	Metabolic Diseases, Arthritis, and Gastroenterology	March 28-April 1, full time	75.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga. At: Grady Memorial Hospital	General Internal Medicine	Arranged, 12 weeks-12 months, full time	[79]

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
INTERNAL MEDICINE—Continued			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Treatment of Varicose Veins	Weekly, 2 days, part time	$50.00
	Intensive Course in Internal Medicine	May 2, 2 weeks, full time	125.00
	Intensive Course in Liver and Biliary Tract Diseases	June 20, 1 week, full time	100.00
University of Kansas Medical Center, Kansas City [12]	Metabolic Diseases	February 24-26, full time	30.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Boston City Hospital	Internal Medicine 1	September 1, 12 months, full time	605.00
	Internal Medicine 2	June 1-August 31 and September 1-November 30, full time	380.00
At: Massachusetts General Hospital	Internal Medicine 3	May 16-June 25, full time	255.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor			
At: University Hospital	Clinical Internal Medicine	January 6-April 14, once weekly, part time	35.00
	Diseases of Blood and Blood-Forming Organs	April 4-8, full time	50.00
	Recent Advances in Therapeutics	April 11-15, full time	50.00
Wayne University College of Medicine, 1401 Rivard St., Detroit 7	Medical Conference	Second quarter, once weekly, part time	15.00
At: Receiving Hospital	Therapeutic Conference (Seminar on New Drugs)	Second quarter, once weekly, part time	15.00
	Medical Seminar	Second quarter, once weekly, part time	15.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Internal Medicine for Internists	February 14-16, full time	25.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1]			
At: Jewish Hospital	Hypertension and Nephritis	April, 8 weeks, part time	20.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Montefiore Hospital	Medicine PM 72—Neoplastic Disease	February 1-May 31, part time	150.00
At: Columbia-Presbyterian Medical Center	Cerebral Palsy PM 1-A—Postgraduate Course in Cerebral Palsy	February 7-25, full time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Internal Medicine	September, 8 months, full time	800.00
	Internal Medicine	Arranged, 1 month, full time	150.00
	Internal Medicine	Arranged, 2 months, full time	300.00
	Peripheral Vascular Disease (dm 1126)	Arranged, 10 days, part time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Vascular Disease	Arranged, part time	200.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	541-A Seminar in Internal Medicine	April 11-June 3, full time	250.00
	547-A Problems in Diagnosis	April 11-May 23, part time	35.00
	542-A Arthritis and Allied Rheumatic Disorders	April 12-May 31, part time	50.00
	5413-A Peripheral Vascular Diseases	April 12-May 31, part time	40.00
	545-A Normal and Pathological Physiology: Functional and Chemical Aspects	April 13-June 1, part time	40.00
	5410-A Diseases of the Liver and Biliary Tract	April 13-June 1, part time	35.00
	5412-A Nephritis and Hypertension	April 15-June 3, part time	30.00
	5419-A Symposium on Modern Therapeutics in Internal Medicine	June 13-24, full time	90.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Applied Aspects of Calcium and Phosphorus Metabolism	May 23-24, full time	40.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25			
At: M. D. Anderson Hospital and Tumor Institute	Internal Medicine	April 5-June 3, twice weekly, part time	Not given
University of Wisconsin Medical School, 418 N. Randall Ave., Madison 6			
At: University Hospitals	Observation Course in Internal Medicine	Arranged, 1 month, full time	100.00
MALIGNANT DISEASE			
Highland Alameda County Hospital, 2701 14th Ave., Oakland 6, Calif.[14]	Hormal Therapy of Cancer	June 16, full time	10.00
Colorado State Medical Society, 835 Republic Bldg., Denver 2 [19]			
At: Shirley-Savoy Hotel	Rocky Mountain Cancer Conference	July 13-14, full time	None
The Cancer Institute at Miami, 1155 N. W. 14th St, Miami, Fla.	Physicians' Postgraduate Courses in Cancer Cytology	Continuous, 1-12 months, full time	[80]
Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis [20]	Symposium on Malignancy—Urologic Cancer	March 29-30, part time	None
Massachusetts State Department of Public Health, Division of Cancer and Other Chronic Diseases, 334 Boylston St., Boston			
At: Twenty-two state and state-aided cancer clinics [81]	Cancer	Arranged, one day, part time	None
Wayne University College of Medicine, 1401 Rivard St., Detroit 7			
At: Yates Clinic	Cancer Detection	Second quarter, once weekly, part time	25.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Cancer Detection for General Physicians	February 17-19, full time	15.00
Albany Medical College, 47 New Scotland Ave., Albany 8, N. Y. [11]	Cancer Teaching Day—Early Diagnosis of All Cancer and Therapy of Breast Cancer	March 31, part time	10.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32 [11]			
At: Columbia-Presbyterian Medical Center	Cancer PM 1	April 18-30, full time	100.00
Cornell University Medical College, 1300 York Ave., New York 21 [21]	Exfoliative Cytology (Cytologic Diagnosis of Cancer)	March 7-June 3, full time	300.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25			
At: Methodist Hospital, Lubbock	Cancer Symposium	January, tentative	Not given
At: M. D. Anderson Hospital and Tumor Institute	Cancer Symposium	February, 2 days, full time	Not given
Wyoming State Health Department, Cheyenne [22]			
At: Rock Springs, Cody and Lander	Wyoming Traveling Tumor Clinic	Throughout the year, 2 days, full time	None

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICAL TECHNOLOGY			
University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 20 [23]	Postgraduate Course in Medical Technology	March 16-19, full time	[82]
MEDICAL WRITING			
New York University, Division of General Education, 1 Washington Square North, New York	Workshop in Writing for the Medical Journals [83]	February 10, 15 weeks, part time	$50.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 At: M. D. Anderson Hospital and Tumor Hospital	Medical Writing	January-February, twice weekly, part time	Not given
MEDICINE, GENERAL			
Alabama Academy of General Practice, 17 Molton St., Montgomery At: Medical College of Alabama, Birmingham	Alabama Academy of General Practice Postgraduate Seminar Alabama Academy of General Practice Postgraduate Seminar	January 19-20, full time August, 2 days, part time	None None
John A. Andrew Clinical Society, Tuskegee Institute, Ala.[24] At: John A. Andrew Memorial Hospital	John A. Andrew Clinic	April 3-8, full time	10.00
California Medical Association, Postgraduate Activities, Box A1, Carmel At: San Bernardino	Medical and Surgical Postgraduate Institute	January 27-28, full time	10.00
At: Santa Rosa	Medical and Surgical Postgraduate Institute	February 3-4, full time	10.00
At: Santa Barbara	Medical and Surgical Postgraduate Institute	February 17-18, full time	10.00
At: Fresno or Yosemite Valley	Medical and Surgical Postgraduate Institute	April, 2 days, full time	10.00
At: Lake Tahoe	Medical and Surgical Postgraduate Institute	June 16-17, full time	10.00
University of California Medical Center, University Extension, San Francisco 22 At: Mount Zion Hospital	Course for General Practitioners	March 7-11, part time	60.00
San Joaquin County Medical Society, 936 N. Commerce St., Stockton, Calif. At: Stockton State Hospital	Stockton Postgraduate Study Club	Fall, 16 hours, part time	10.00
San Fernando County Medical Association, 14532 Van Owen St., Van Nuys, Calif. At: Saint Joseph Hospital, Burbank	Postgraduate Breakfast Study Club	Once weekly, 40 weeks, part time	[84]
Colorado State Medical Society, 835 Republic Bldg., Denver 2 At: Shirley-Savoy Hotel	Mid-Winter Clinics	February 15-18, full time	5.00
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver 20	Sixth Annual Colorado Intern and Resident Clinics Colorado Medical Alumni Clinics General Practice Review	June 2-3, full time June 10, full time January 17-22, full time	None None [85]
George Washington University School of Medicine, 1335 H St., N. W., Washington 5, D. C. At: George Washington University Hospital	General Medicine	March 21-25, full time	75.00
University of Florida Graduate School, Department of Medicine, 1625 Riverside Ave., Jacksonville 4 [132a]	23rd Annual Graduate Short Course	June 20-25, full time	10.00
Southeastern Surgical Congress, 701 Hurst Bldg., Atlanta, Ga. At: Biltmore Hotel	The Southeastern Surgical Congress Assembly	February 21-24, full time	15.00
Chicago Medical Society, 86 E. Randolph St., Chicago At: Palmer House	Annual Clinical Conference	March 1-4, full time	[86]
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	General Medicine	March 23, 10 days, part time	100.00
Illinois Academy of General Practice, 14 E. Jackson Blvd., Chicago 4 At: Simultaneously at 17 locations in Illinois [87]	Medicine for Today	April 11-May 27, 2 hours weekly, part time	40.00
New Orleans Graduate Medical Assembly, Room 103, 1430 Tulane Ave., New Orleans At: Municipal Auditorium	New Orleans Graduate Medical Assembly	March 7-10, full time	20.00
Postgraduate Medical Institute, 22 Fenway, Boston At: Lynn and Salem	Courses in General Medicine	January 5-March 9, part time	[88]
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor [25] At: Throughout the state [89]	Extramural Course	Spring and fall, 2 days, full time	None
American Academy of General Practice, Wayne County Chapter, 4421 Woodward Ave., Detroit 1 At: Grace Hospital	Continuing Education General Practitioners	February 1-May 10, once weekly, part time	25.00
Grace Hospital, 4160 John R. St., Detroit 1 [26]	Postgraduate Clinical Program	January 1-May 10, part time	15.00
Michigan Academy of General Practice, 15125 Grand River Ave., Detroit 27 At: Sheraton Cadillac Hotel	One Day Symposium	February 9, full time	None
Minnesota Heart Association, 532 Endicott on 4th, St. Paul 1 At: Scott Hall, University of Minnesota, Minneapolis	Symposium on Arteriosclerosis	September, 3 days, full time	None
American Academy of General Practice, 403 W. 34th St., Kansas City 11, Mo. At: Shrine Auditorium, Los Angeles, Calif.	AAGP Annual Scientific Assembly	March 28-31, full time	[90]
Homer G. Phillips Hospital, Internes Alumni Association, 2601 N. Whittier St., St. Louis 13 [27]	Homer G. Phillips Hospital Internes Alumni Convention	May 2-6, full time	None
Creighton University School of Medicine, 302 N. 14th St., Omaha At: Creighton Memorial St. Joseph Hospital	Spring Medical Assembly	April, 3 days, full time	7.50
Atlantic City Hospital, 26 S. Ohio Ave., Atlantic City, N. J.	Visiting Chief Program	Every week, part time	None
New Jersey Academy of General Practice, 376 Fairmount Ave., Jersey City [28] At: West Jersey Hospital, Camden	Chronic Diseases	January-March, 1 day monthly, part time	None

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
Albany Medical College, 47 New Scotland Ave., Albany 8, N. Y.	Medical Therapeutic Conference	September 1-May 30, once weekly, part time	None
Cornell University Medical College, 1300 York Ave., New York 21	Practitioners Conference	Arranged	None
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	General Medicine	Arranged, 4 weeks, full time	$100.00
	General Practitioner's Course	Arranged, 4 weeks, full time	100.00
University of North Carolina School of Medicine, Extension Division, Chapel Hill			
At: Goldsboro	Postgraduate Course in Medicine [29]	January 11-February 15, 6 days, part time	20.00
At: Three centers [91]	Postgraduate Course in Medicine [30]	January 12-February 16, 6 days, part time	20.00
At: Statesville	Postgraduate Course in Medicine [31]	March 1-April 12, 6 days, part time	20.00
At: North Carolina Memorial Hospital	Postgraduate Course in Medicine	February 16-April 13, 9 days, part time	10.00
	Annual Postgraduate Course in General Medicine and Surgery	March 8-10, full time	20.00
North Carolina Academy of General Practice, 820 Nissen Bldg., Winston-Salem	North Carolina Academy of General Practice [92]	Spring and fall, 3 days, full time	None
At: Various medical districts	General Practice	February 16-17, full time	15.00
Frank E. Bunts Educational Institute, 2020 E. 93d St., Cleveland 6 [32]			
Southwestern Ohio Society of General Physicians, 7017 Miami Ave., Madeira	Seminar Series for General Physicians	January 23 and March 27, 1 day, part time	[93]
At: University of Cincinnati College of Medicine, Cincinnati		February 9-11, full time	15.00
Jefferson Medical College and Hospital, 1025 Walnut St., Philadelphia [33]	Jefferson Graduate Assembly	June 14-16, part time	None
	Alumni Clinics		
Philadelphia County Medical Society, 301 S. 21st St., Philadelphia 3	Postgraduate Institute	March 29-April 1, full time	None [94]
At: Bellevue-Stratford Hotel			
Anderson County Medical Society, 1501 N. Main St., Anderson, S. C.	Piedmont Postgraduate Clinical Assembly	September 14-15, full time	7.50
At: Clemson College			
University of South Dakota School of Medical Sciences, Vermillion [95]	Master of Medical Science	February 1 and September 1, 9-12 months, full time	100.00
Chattanooga-Hamilton County Medical Society, Read House, Chattanooga, Tenn.	Tennessee Valley Medical Assembly	October 3-4, full time	15.00
Dallas Southern Clinical Society, 433 Medical Arts Bldg., Dallas 1, Texas			
At: Adolphus and Baker Hotels	Spring Clinical Conference	March 14-17, full time	25.00
Southwestern Medical School of the University of Texas, 2211 Oak Lawn Ave., Dallas 4 [34]	General Practice Seminars	[97]	
At: Various centers [96]	Fluids and Electrolytes (Seminar)	April 4-6, full time	Not given
Postgraduate Medical Assembly of South Texas, 412 Jesse H. Jones Library Bldg., Houston			
At: Shamrock Hotel	Postgraduate Medical Assembly of South Texas	July 18-20, full time	20.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25			
At: Scott and White Memorial Hospitals, and Scott, Sherwood and Brindley Foundation, Temple	Postgraduate Conference in Medicine and Surgery	March 7-9, full time	Not given
At: Cactus Hotel, San Angelo	Clinical Seminars	January-May, 1 day a month, part time	18.00
At: El Paso	Medical and Surgical Seminars	Monthly, 1 day, full time	Not given
International Medical Assembly of Southwest Texas, Inc., P. O. Box 2445, San Antonio 6			
At: Municipal Auditorium	International Medical Assembly of Southwest Texas	January 24-26, full time	20.00
University of Vermont College of Medicine, Pearl St., College Park, Burlington	May Meeting	May, 1 day, full time	Not given
University of Washington School of Medicine, Seattle	Fall Clinic Day	October, 1 day, full time	None
State Medical Society of Wisconsin, Box 1109, Madison [35]			
At: Janesville, Dodgeville, Baraboo, Viroqua	Postgraduate Medical Education Courses [98]	January 19, January 20, February 16, and February 17	3.00
University of Alberta Faculty of Medicine, Edmonton, Alberta, Canada [36]	Annual Refresher Course	May, 5 days, full time	10.00
At: Various Alberta centers	Traveling Team Refresher Course	Winter, 1 day, full time	None
University of Toronto Faculty of Medicine, Toronto 5, Canada	Advanced Graduate Course	August 22-October 1 (tentative), full time	200.00
MICROBIOLOGY			
U. S. Public Health Service, Communicable Disease Center, Virus and Rickettsia Laboratories, Montgomery, Ala.	Laboratory Diagnosis of Rabies [37]	March 14-18, full time	None
	Laboratory Diagnosis of Virus Diseases [38]	March 14-25, full time	None
Wayne University College of Medicine, 1401 Rivard St., Detroit 7	Seminar	Second quarter, once weekly, part time	15.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Bacteriology (db 1016)	Arranged, 5 weeks, part time	100.00
	Immunology (db 1026)	Arranged, 3 weeks, full time	50.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia	Modern Viewpoints in Carbohydrate and Fat Metabolism with Clinical Applications	June 6-7, full time	40.00
	Ionic (Acid-Base) Balance and Water Balance with Clinical Applications	May 25-27, full time	60.00
NEUROLOGICAL SURGERY			
New York University-Bellevue Medical Center, 550 First Ave., New York 16	Neurosurgery 553-B	May 2-7, full time	125.00
Medical Advancement Trust of Maumee Valley Hospital, 2025 Arlington Ave., Toledo 9, Ohio			
At: Academy of Medicine of Toledo and Lucas County	Neurological Examinations and Neurological Surgery	February 10-11, part time	None

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NEUROLOGY AND PSYCHIATRY			
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Advanced Hypnosis	January 27-29, full time	$50.00
	Treatment of Emotional Problems	February 10-14, part time	50.00
	Advanced Psychiatric Case Seminar	March 1-April 19, part time	50.00
	Diagnostic Psychological Testing	March 17-April 14, part time	50.00
University of California Medical Center, University Extension, San Francisco 22 At: Langley Porter Clinic	Symposia on Psychosomatic Medicine	March 23, 30 and April 6, part time	Not given
Yale University School of Medicine, 333 Cedar St., New Haven, Conn.[39] At: Connecticut State Hospital, Middletown	Basic Psychiatry [99]	January 3-February 28, part time	None
	Child Psychiatry [99]	March 7-April 11, part time	None
	Pediatric Neurology [99]	April 18-May 9, part time	None
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.	Psychosomatic Medicine	May 5, full time	5.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical Neurology	March 23, 10 days, part time	100.00
State University of Iowa College of Medicine, Iowa City	Postgraduate Course in Neurology	April 6, full time	10.00
University of Kansas Medical Center, Kansas City[12] At: Veterans Administration Hospital, Kansas City, Mo.	Clinical Neurology	January 24-27, full time	40.00
Metropolitan State Hospital, 475 Trapelo Rd., Waltham 54, Mass.[40]	Review Course in Basic Neurology and Psychiatry	March 4-May 6, part time	None
University of Minnesota, Center for Continuation Study, Minneapolis 14	Neurology for General Physicians and Specialists	February 7-12, full time	40.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1] At: Kings County Hospital	Child Psychiatry	April, 10 weeks, part time	20.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32 At: Montefiore Hospital	Neurology PM 61 Advanced Neurology	March-September, 3-month periods, full time	150.00
At: Mt. Sinai Hospital	Neurology PM 30 Clinical Neurology	March 28-April 1, full time	60.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Introduction to Psychoanalysis (dps 1016)	Fall, 12 days, part time	30.00
	Seminar on Psychosomatic Medicine (dps 1026)	Fall semester, 6 lectures, part time	40.00
	Child Psychiatry	Fall, 10 hours, part time	40.00
	Readings in Psychoanalytic Literature (dps 1046)	Fall, 15 evenings, part time	40.00
	Psychoanalysis and Psychiatry (dps 1056)	Spring, 12 evenings, part time	40.00
Postgraduate Center for Psychotherapy, 218 E. 70th St., New York 23	Development of Psychoanalytic Thinking, Part II	February 14, 15 sessions, part time	40.00
	Clinical Conferences on Treatment Planning	February 15, 15 sessions, part time	40.00
	Principles of the Theory and Practice of Group Psychotherapy	February 17, 15 sessions, part time	30.00
	Basic Psychiatry and Neurology, Part II	February 17, 15 sessions, part time	40.00
	Handling of Special Problems in Therapy	February 17, 5 sessions, part time	15.00
	Clinical Conferences: Character Disorders	March 24, 10 sessions, part time	30.00
William Alanson White Institute of Psychiatry, Psychoanalysis, and Psychology, 12 E. 86th St., New York 28	Seminar on Child Therapy	February 2, 10 weeks, part time	40.00
	Seminar on Current Issues in Psychoanalysis	February 1, 8 days, part time	25.00
	Seminar on the Initial Interview	January 24, 10 days, part time	35.00
	Interpersonal Problems of Growth	February 1, 10 days, part time	30.00
	Seminar on Evolution of Psychoanalytic Concepts	January 19, 11 days, part time	25.00
	Evolution of Psychoanalytic Concepts	January 19, 11 days, part time	20.00
	Behavior and Brain Function	February 11, 6 days, part time	20.00
	Literature of Psychoanalysis	February 1, 11 days, part time	35.00
	Practical Seminar for Physicians	January 26, 10 days, part time	30.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1 [2]	Neurology	February 21-23, full time	30.00
University of Washington School of Medicine, Seattle 5 [3]	Practical Psychiatry	July 25-29, full time	50.00
University of Montreal Faculty of Medicine, 2900 Mount-Royal Blvd., Montreal 26, Canada	Continuation Course in Neuroanatomy and Neurophysiology	First semester, 15 weeks, part time	100
OBSTETRICS AND GYNECOLOGY			
Los Angeles Obstetrical and Gynecological Society, 10711 Riverside Dr., North Hollywood, Calif. At: Ambassador Hotel, Los Angeles	Los Angeles Obstetrical and Gynecological Forum	February 12-13, full time	20.00
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Gynecology	March 23-May 25, once weekly, part time	30.00
The Obstetrical and Gynecological Assembly of Southern California, 6253 Hollywood Blvd., Los Angeles 28 At: Ambassador Hotel	Obstetrical and Gynecological Assembly of Southern California	February 14-18, full time	85.00
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Obstetrics and Gynecology	Early May, full time	50.00
Army Medical Service Graduate School, Washington 12, D. C. At: Brooke Army Hospital, San Antonio, Texas	Obstetrics and Gynecology	March 23-26, full time	None
George Washington University School of Medicine, 1335 H St., N. W., Washington 5, D. C. At: George Washington University Hospital	Obstetrics	March 7-11, full time	75.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Surgical Obstetrics	January 5 and March 2, 4 days, part time	100.00
	Practical and Didactic Course in Office Gynecology	January 5, March 2, May 4, 4 days, part time	100.00
	Gynecologic Surgery	January 5, March 2, May 4, 5 days, part time	100.00
	Office and General Obstetrics	February 2 and May 25, 4 days, part time	100.00
	Vaginal Approach to Pelvic Surgery	February 7, March 7, May 2, June 6, 1 week, full time	100.00
	Intensive Course in Gynecology	February 14, March 14, April 18, June 13, full time	150.00
	Intensive Course in Obstetrics	February 28, March 28, May 9, 2 weeks, full time	150.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY—Continued			
State University of Iowa College of Medicine, Iowa City	Postgraduate Course in Obstetrics and Gynecology	February 25-26, full time	$15.00
Johns Hopkins University School of Medicine, 710 N. Washington St., Baltimore 5 At: Johns Hopkins Hospital	Gynecological Pathology	February 1, 8 weeks, part time	150.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Boston Lying-In Hospital	Clinical Obstetrics	April and May, 1 or 2 months, full time	155.00
At: Free Hospital for Women	Gynecology 2	June, July, August, and September, 1 month, full time	155.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor At: Woman's Hospital	Obstetrics	January 24-26, full time	50.00
	Gynecology	February 23-26, full time	50.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Gynecology for General Physicians	April 14-16, full time	25.00
Albany Medical College, 47 New Scotland Ave., Albany 8, N. Y.	Specialty Day—Gynecology and Orthopedics for the General Practitioner	March 3, part time	10.00
Bronx County Medical Society, 400 E. Fordham Rd., New York 58 At: Local Health Center	Maternal Welfare Conference	Monthly, 1 day, part time	None
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32 At: Margaret Hague Maternity Hospital	Obstetrics PM 81—Observation Course	Arranged, 1 month, full time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Obstetrics and Gynecology	September, 8 months, full time	700.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical Course in Office and General Obstetrics	Arranged, 4 weeks, part time	100.00
	Gynecology and Obstetrics Including Manikin Obstetrics and Operative Gynecology (Cadaver)	April, 2 months, full time	250.00
	Manikin Obstetrics	Arranged, 6 weeks, part time	100.00
	Clinical and Operative (Cadaver) Gynecology	Arranged, 6 weeks, part time	175.00
	Clinical Gynecology	Arranged, 6 weeks, part time	75.00
	Culdoscopy	Arranged, twice weekly, part time	100.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	566-B Culdoscopy	January 31-February 4, part time	50.00
	565-A Electrical Modalities in Gynecology	February 7-March 11, part time	75.00
	569-A Surgical Anatomy as Applied to Gynecology	February 15-March 15, part time	175.00
	563-A Technique of Gynecological Examination	March 21-April 25, part time	75.00
State University of New York College of Medicine, 766 Irving Ave., Syracuse 10 At: Syracuse Memorial Hospital	Postgraduate Course in Gynecology for General Practitioners	April 18-23, full time	25.00
Southern Pediatric Seminar, Saluda, N. C.	Obstetrical Course of Southern Pediatric Seminar	July 25-30, full time	25.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1 [3]	Obstetrics-Gynecology	January 31-February 2, full time	30.00
Tennessee State Medical Association, 4 S. Dunlap, Memphis 3 [41] At: Forty-five teaching centers in the state	Obstetrics [101]	January-August, 1955, 10 weeks, part time	20.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [63]	Obstetrics	Arranged, 2 weeks, full time	25.00
University of Washington School of Medicine, Seattle 5 [3]	Obstetrics and Gynecology	March 30-31, full time	20.00
Marquette University School of Medicine, 561 N. 15th St., Milwaukee 3	Obstetrics	January 13-February 19, once weekly, part time	35.00
University of Toronto Faculty of Medicine, Toronto 5, Canada	Advanced Graduate Course	August 22-October 1 (tentative), full time	200.00
OCCUPATIONAL MEDICINE			
Yale University School of Medicine, 310 Cedar St., New Haven, Conn.[42] At: Bridgeport Hospital	Occupational Medicine for General Practitioners	January 7-March 25, 6 lectures, part time	None
OPHTHALMOLOGY AND OTOLARYNGOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Otolaryngology	February 8-April 5, once weekly, part time	30.00
Research Study Club of Los Angeles, Elk's Club, 627 S. Parkview Ave., Los Angeles 5	24th Annual Mid-Winter Clinical Convention	January 17-28, full time	100.00
Stanford University School of Medicine, 2398 Sacramento St., San Francisco	Stanford Spring Postgraduate Conference in Ophthalmology	March 21-25, full time	100.00
University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 20 [43]	Postgraduate Course in Ophthalmology	July 25-28, full time	40.00
Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn.[44]	Postgraduate Series in Ophthalmology	January 7-May 13, part time	15.00
University of Florida Graduate School, Department of Medicine, 1625 Riverside Ave., Jacksonville 4 At: San Souci Hotel, Miami Beach	Midwinter Seminar in Ophthalmology and Otolaryngology	January 17-22, full time	Not given
Armed Forces Institute of Pathology, Washington 25, D. C.[45]	Ophthalmic Pathology	March 21-25, full time	None
Army Medical Service Graduate School, Washington 12, D. C. At: Walter Reed Army Medical Center	Recent Advances in Ophthalmology	February 2-4, full time	None
Chicago Ophthalmological Society, 8 W. Oak St., Chicago At: Drake Hotel	Clinical Conference	February 11-12, full time	35.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical Course in Otolaryngology	Arranged, 2 weeks, first of every week, full time	50.00
	Clinical Course in Ophthalmology	Arranged, 2 weeks, first of every week, full time	50.00
Illinois Masonic Hospital, 836 Wellington Ave., Chicago 14	Reconstructive Surgery of Nasal Septum and External Nasal Pyramid	Fall, 8 days, full time	Not given

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OPHTHALMOLOGY AND OTOLARYNGOLOGY—Continued			
Northwestern University Medical School, 303 E. Chicago Ave., Chicago	Endaural Otologic Surgery	April 5-30, full time	$500.00
	Audiology	May 3-8, full time	100.00
	Basic Science Course in Extraocular Muscles	September 19-30, full time	100.00
	Basic Science Course in Extraocular Muscles	Arranged, 3 days, full time	150.00
	Fellowship in Fenestration Surgery	Arranged, 2-6 months, full time	500.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12 At: Illinois Eye and Ear Infirmary	Postgraduate Course in Ophthalmology [102]	July 1-December 31, full time	500.00
Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis	Anatomical and Clinical Course in Otolaryngology	February 7-19, full time	250.00
State University of Iowa College of Medicine, Iowa City	Seminar in Ophthalmology	Weekly, 1 day, part time	None
	Ophthalmology Clinical Conference	Monthly, 1 day, full time	None
University of Kansas Medical Center, Kansas City	Ophthalmology and Otolaryngology [46]	April 4-8, full time	50.00
	Laryngeal Surgery [12]	June 24-27, full time	75.00
Ophthalmology Study Council, Sullivan Harbor, Maine At: Colby College, Waterville	Lancaster Courses in Ophthalmology	June 25-September 3, full time	325.00
Colby College, Waterville, Maine	Audiology for Industry	August, 1 week	20.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Montefiore Hospital	Ophthalmology PM 60—Elementary Ophthalmoscopy	January 12-March 9, full time	30.00
	Ophthalmology PM 61—Perimetry	April 4, May 16, part time	30.00
At: Columbia-Presbyterian Medical Center	Otolaryngology M 2—Histopathology of the Ear, Nose, and Throat	April 12-June 2, part time	100.00
	Ophthalmology PM 40—Ophthalmological Aspects of General Medicine	April 25-30, full time	60.00
At: Mount Sinai Hospital	Otorhinology PM 30—Rhinoplasty and Otoplasty	July 16-30, full time	250.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12	Basic Science in Ophthalmology	July 5-June 30, 1 year, full time	500.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Massachusetts Eye and Ear Infirmary	Clinical Ophthalmology and Ocular Pathology	January 3-29, full time	155.00
	Fundamentals in Refraction and Ocular Motility	January 31-February 26, full time	155.00
	Audiology	January 31-Feb. 12, full time	130.00
	Anatomy of the Temporal Bone	February 14-March 26, full time	305.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor At: University Hospital	Ophthalmology	April 18-20, full time	50.00
	Otolaryngology	April 14-16, full time	50.00
American Academy of Ophthalmology and Otolaryngology, 100 First Ave. Bldg., Rochester, Minn.	Home Study Courses [103]	September 1, 10 months, full time	20.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Otolaryngology for Specialists	January 31-February 4, part time	25.00
	Ophthalmology for Specialists	January 31-February 4, part time	25.00
Hansel Foundation, 634 Grand Blvd., St. Louis 3 At: Park Plaza Hotel	Allergy in Relation to Otolaryngology	May 30-June 3, full time	150.00
Washington University School of Medicine, Department of Ophthalmology, 640 S. Kingshighway Blvd., St. Louis 10	Basic Sciences of Ophthalmology	October, 8 months, full time	800.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1] At: Jewish Chronic Disease Hospital	External Eye Diseases and Ophthalmoscopy	April, 8 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Otolaryngology	September, 8 months, full time	700.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Surgical Anatomy of Nose and Accessory Sinuses	Arranged, 6 weeks, part time	150.00
	Operative Otology (Cadaver)	Arranged, 4 weeks, part time	100.00
	Head and Neck Dissection	Arranged, 6 weeks, part time	150.00
	Operative Nose and Throat (Dissection)	Arranged, 6 weeks, part time	150.00
	Seminar in Ophthalmology and Otolaryngology	Arranged, 5 days, full time	50.00
	Motor Anomalies	Arranged, 4 weeks, part time	50.00
	Operative Ophthalmology (Dissection)	Arranged, 4 weeks, part time	100.00
	Ophthalmology, Including Cadaver Ophthalmology and Refraction	Arranged, 3 months, part time	300.00
	Advanced Otology	Arranged, 2 weeks, part time	250.00
	Refraction	Arranged, 4 weeks, part time	100.00
	Otolaryngology and Ophthalmology, Including Cadaver Eye, Ear, Nose, and Throat and Refraction	January and April, 3 months, full time	600.00
	Clinical Ophthalmology	Arranged, 6 weeks or 3 months, part time	125.00
	Clinical Otolaryngology	Arranged, 6 weeks or 3 months, part time	150.00
	Clinical Ophthalmology and Otolaryngology	Arranged, 6 weeks or 3 months, part time	250.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	594-B Endaural Surgery	January 31-February 11, full time	200.00
	579-A Neuro-Ophthalmology	January 17-21, part time	50.00
	571-A Motor Anomalies of the Eye (Part I) (for Specialists)	March 7-12, full time	90.00
University of Cincinnati College of Medicine, Department of Otolaryngology, Eden and Bethesda Avenues, Cincinnati 19	Graduate Operative Course in Otolaryngology	April 18-23, full time	150.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 At: M. D. Anderson Hospital and Tumor Institute	Ocular Motor Anomalies	February 8-March 17, twice weekly, part time	35.00
Gill Memorial Hospital, 711 S. Jefferson St., Roanoke, Va. At: Patrick Henry Hotel	Gill Memorial Annual Spring Congress	April, 1 week, part time	[104]
University of Toronto Faculty of Medicine, Toronto 5, Canada	Eye and Ear, Nose and Throat Refresher Course	April 11-15, full time	100.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ORTHOPEDIC SURGERY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Diseases and Injuries of Bones and Joints	July 5-29, full time	$100.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]	Orthopedic Surgery	January 6, full time	5.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12	Basic Science as Applied to Orthopedics [105]	September 7, 5 months, full time	300.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Children's Hospital	Orthopedic Surgery 1	Arranged, 1-12 months, full time	[106]
At: Massachusetts General Hospital	Orthopedic Surgery 2	Arranged, 3-12 months, full time	[106]
At: Massachusetts General Hospital and Children's Hospital	Orthopedic Surgery 3	Arranged, 1-3 months, full time	[107]
Albany Medical College, 47 New Scotland Ave., Albany 8, N. Y.	Specialty Day—Gynecology and Orthopedics for the General Practitioner	March 3, part time	10.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Hospital for Joint Diseases	Orthopedic Surgery PM 80—Survey of Diseases of Children	February 17-April 28, part time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Orthopedics in General Practice (df 1026)	April-May, 1 week, full time	60.00
	Fractures and Allied Trauma (df 1016)	Fall and spring, 4 weeks, full time	200.00
	Orthopedics of the Foot	Arranged, 8 days, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Orthopedic Surgery for General Surgeons	Arranged, 2 months, part time	100.00
	Operative Orthopedics (Dissection)	Arranged, 5 periods, part time	100.00
	Advanced Orthopedics of the Foot	Arranged, 8 periods, part time	100.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	582-A Orthopedics in General Practice	June 13-15, full time	50.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [62]	Orthopedic Surgery	Arranged, 2 weeks, full time	25.00
	PARASITOLOGY		
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Parasitology (db 1036)	Arranged, 3 weeks, full time	75.00
	PATHOLOGY		
Armed Forces Institute of Pathology, Washington 25, D. C.[45]	Application of Histochemistry to Pathology	May 2-4, full time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical Course in Gross and Surgical Pathology	Arranged, 6 months, full time	500.00
University of Kansas Medical Center, Kansas City [12]	Pathology of Crime	March 7-8, full time	40.00 [107]
State University of Iowa College of Medicine, Iowa City			
At: University Hospital	Clinical Pathology Conference	Monthly, 2 days, part time	Not given
University of Maryland School of Medicine, 29 S. Greene St., Baltimore	Neuropathology	Arranged, 6 months, full time	210.00
Wayne University College of Medicine, 1401 Rivard St., Detroit 7	Neuropathology	Second quarter, once weekly, part time	50.00
	Bone and Joint Diseases	Second quarter, once weekly, part time	50.00
At: Receiving Hospital	Medical Pathologic Conference	Second quarter, once weekly, part time	15.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1]			
At: State University College of Medicine	Gynecological and Obstetrical Pathology	March, 10 weeks, part time	100.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32			
At: Columbia-Presbyterian Medical Center	Pathology GM 1—Surgical Pathology	July 1, 6-12 months, full time [109]	72
At: Mount Sinai Hospital	Pathology PM 32—Laboratory Methods in Blood Banks	February 1-March 8, part time	50.00
	Pathology PM 31—Surgical Pathology	February 5-May 21, part time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Pathology (dps 1016)	Arranged, 16 weeks, part time	200.00
	Clinical Pathology (dcp 1016)	Arranged, 26 hours, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Surgical Pathology	Arranged, 3 months, part time	300.00
	Urological Pathology	Arranged, 2 weeks, part time	150.00
	Gynecological Pathology	Arranged, 2 weeks, part time	100.00
	Blood Transfusions	Arranged, 2 weeks, part time	100.00
	General Pathology	Arranged, 3 months and 12 months, part time	1,000.00
	Pathology	Arranged, 3 months, full time	300.00
	Pathology	Arranged, 12 months, full time	1,000.00
	Pathology for Surgeons	Arranged, 1 month, full time	100.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	441-A Gynecological Pathology (for Specialists)	January 25-March 22, part time	100.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13			
At: Veterans Administration Hospital, University Dr.	Surgical Pathology	13 weeks, once weekly, part time	None
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [62]	Surgical Pathology and Pathologic Anatomy	Arranged, 2 weeks, full time	25.00
	Clinical Pathology	Arranged	25.00
At: Cactus Hotel, San Angelo	Clinical Pathological Conference	January-May, once monthly part time	5.00
University of Washington School of Medicine, Seattle 5	Pathology, Continuous Course	Continuous	Not given
Memorial Hospital, Cheyenne, Wyo.			
At: Veteran's Hospital and Memorial Hospital	Pathology Seminar	Arranged, 3 weeks, full time	None
	PEDIATRICS		
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33 [47]			
At: Children's Hospital	864: Pediatric Clinics for the General Practitioner	January 4-March 22, part time	25.00
University of California Medical Center, University Extension, San Francisco 22	Pediatric Conference	September, 5 days, part time	Not given

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
PEDIATRICS—Continued			
Children's Hospital, 1056 E. 19th Ave., Denver	Summer Clinics	June 22-24, full time	$25.00
University of Colorado Medical Center, 4200 E. Ninth Ave., Denver 20 [48]	Clinical Management of Emotional Problems in Children	April 4-8, full time	55.00
American Academy of Pediatrics, 610 Church St., Evanston, Ill. At: Sheraton-Cadillac Hotel, Detroit, Mich.	Spring Session	April 5-7, full time	110
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Diagnosis and Treatment of Congenital and Rheumatic Heart Disease in Infants and Children	March 23, 12 days, part time	100.00
	General Pediatrics	March 23, 10 days, part time	100.00
	Intensive Course in Pediatrics	April 4, 2 weeks, full time	100.00
	Intensive Course in Cerebral Palsy	June 13, 2 weeks, full time	225.00
	Department Course in Pediatrics	July 1, 1 year, full time	750.00
	Clinical Pediatrics	Arranged, 2 weeks or more, first of every week, full time	111
University of Kansas Medical Center, Kansas City [12]	Pediatrics	March 14-16, full time	30.00
Baltimore City Medical Society, 1211 Cathedral St., Baltimore 1 [125]	Postgraduate Refresher Courses	January 6-28, once weekly, part time	None
Doctors Hospital, 2724 N. Charles St., Baltimore 18	Pediatrics for the General Practitioner	April, 6 weeks, part time	112
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Children's Hospital	Pediatrics 2A	Arranged, 3-6 months, full time	118
	Pediatrics 2	September 6-December 23, full time	505.00
At: Massachusetts General Hospital	Pediatrics 3	May 16-24, full time	105.00
	Pediatric Metabolism and Endocrinology	May 25-27, full time	55.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor At: University Hospital	Pediatrics	January 26-28, full time	30.00
Albany Medical College, 47 New Scotland Ave., Albany 8, N. Y. At: Albany Hospital	Pediatrics for General Practitioners	March 10-April 21, 6 days, part time	25.00
University of Buffalo School of Medicine, 3435 Main St., Buffalo 14	Pediatrics	March 16-April 20, 6 days, part time	30.00
Bronx County Medical Society, 400 E. Fordham Rd., New York 58 At: Local Health Center	Infant Mortality Conference	Arranged, 2 hours, part time	None
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Pediatrics	September, 8 months, full time	700.00
	Pediatric Allergy Course I	October-March, part time	300.00
	Pediatric Allergy Course II	May, 2 weeks, full time	200.00
	Clinical Pediatrics (dpe 1016)	Arranged, 1 month	150.00
	Clinical Pediatrics (dpe 1016)	Arranged, 3 months	250.00
	Clinical Pediatrics (dpe 1016)	Arranged, 6 months	450.00
	Clinical Pediatrics (dpe 1016)	Arranged, 9 months	650.00
	Clinical Pediatrics (dpe 1016)	Arranged, 12 months	850.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Pediatrics	Arranged, 4 weeks, part time	100.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	614-B Review of Clinical Pediatrics	March 7-12, full time	50.00
Southern Pediatric Seminar, Saluda, N. C.	Southern Pediatric Seminar	July 11-23, full time	25.00 per week
Medical Society of the State of Pennsylvania, Commission on Graduate Education, 230 State St., Harrisburg [17] At: Allentown, Erie, Harrisburg, Johnstown, Pittsburgh, Wilkes-Barre, Williamsport	Pediatrics and Gastroenterology	Spring and fall, 5 weeks, part time	114
St. Christopher's Hospital for Children, 2600 N. Lawrence St., Philadelphia 33 [126]	Seminar in Pediatrics	May 4-5, full time	50.00
	Conference	Weekly, part time	None
University of Tennessee Medical College, 874 Union Ave., Memphis 3	Pediatrics	February 23-25, part time	50.00
Southwestern Medical School of the University of Texas, 2411 Oak Lawn Ave., Dallas 4	Pediatrics for General Practitioners (Seminar)	January 7-9, full time	Not given
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [93] At: M. D. Anderson Hospital and Tumor Institute	Pediatrics	Arranged, 4 weeks, first of each month, full time	25.00
	Pediatrics	February 4-5, full time	Not given
PHYSICAL MEDICINE AND REHABILITATION			
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33 At: Los Angeles County Hospital	879: Advanced Clinical Practice in Physical Medicine	Arranged, 1 year, full time	1,000.00
American Congress of Physical Medicine and Rehabilitation, 30 N. Michigan Ave., Chicago 2 At: Hotel Statler, Washington, D. C.	Instruction Seminar	September 6-11, part time	115
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32 At: Columbia-Presbyterian Medical Center	Physical Medicine and Rehabilitation GM 1	July 1, 6-12 months, full time [116]	72
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Physical Medicine and Rehabilitation	Arranged, 4 weeks, full time	100.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	7312-B Seminar on the Rehabilitation of Children	May 16-20, full time	40.00
PHYSIOLOGICAL CHEMISTRY			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Biochemical Background of Clinical Medicine	March 23, 10 days, part time	100.00
Wayne University College of Medicine, 1401 Rivard St., Detroit 7	Biochemical Applications of Radioactive Isotopes	Second quarter, twice weekly, part time	30.00
	Seminar	Second quarter, once weekly, part time	15.00
	Intermediary Metabolism	Second quarter, once weekly, part time	15.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PHYSIOLOGY		
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Pathological Physiology	Early February, part time	$50.00
Mercy Hospital, Hillcrest Dr., San Diego 3, Calif.	Applied Physiology	Weekly, 1 day, part time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical Physiology	March 23, 10 days, part time	100.00
State University of Iowa College of Medicine, Iowa City	Physiology Seminar	Weekly, 1 day, part time	Not given
	Physiology of Digestion	Weekly, 2 hours, part time	Not given
	Advanced Mammalian Physiology	Weekly, 2 hours, part time	Not given
Wayne University College of Medicine, 1401 Rivard St., Detroit 7	Physiology and Pharmacology Seminar	Second quarter, once weekly, part time	15.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Physiology of Respiration (dph 1026)	Arranged, 1 month, full time	75.00
	Physiology of Nervous System (dph 1036)	Arranged, 2 weeks, full time	50.00
	Physiology of the Special Senses (dph 1046)	Arranged, 1 month, full time	75.00
	Physiology of the Endocrine System	Arranged, 1 month, full time	75.00
	POLIOMYELITIS		
Orthopaedic Hospital, Polio Teaching Program, 2400 S. Flower St., Los Angeles [49]	Poliomyelitis	April 26-30, full time	None
Georgia Warm Springs Foundation, Warm Springs [49]	Physical Therapy and Occupational Therapy in the Care of Poliomyelitis	January, 1 week, full time; April, 1 week, full time	None
Children's Medical Center, 300 Longwood Ave., Boston [49]	Poliomyelitis Refresher Course for Physicians	June 14-19 and August 2-7, full time	50.00
Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, First Ave. and 27th St., New York 16 [49]	Poliomyelitis	January 18-22 and May 17-21, full time	None
D. T. Watson School of Physiatrics, Leetsdale, Pa.[49]	Poliomyelitis	May 3-7, full time	Not given
	Management of Acute Poliomyelitis with Emphasis on Prescription of the Respirator and Rocking Bed	May, 5 days, full time	10.00
	PROCTOLOGY		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Practical and Didactic Course in Proctoscopy and Sigmoidoscopy	January 4, February 8, March 15, April 19, May 17, and June 7, 3 days, part time	50.00
	Proctology	January 26, March 9, and May 25, 5 days, part time	100.00
Tufts College Medical School, 136 Harrison Ave., Boston [18]	Proctology II	May 2-27, full time	255.00
At: Boston Dispensary and Mt. Auburn Hospital	Proctology III	Arranged, 1-2 months, full time	105.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Proctology for General Physicians	May 16-21, full time	40.00
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1]			
At: Jewish Hospital	Proctology	April, 6 weeks, part time	40.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical Proctology	Arranged, 6 weeks, part time	75.00
	Clinical and Cadaver Proctology	Arranged, 6 weeks, part time	175.00
	Clinical Gastroenterology	Arranged, 6 weeks, part time	75.00
	Proctology, Gastroenterology, Operative Proctology (Dissection)	January and April, 6 weeks, part time	200.00
	Clinical Proctology and Gastroenterology	January and April, 6 weeks, part time	100.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [63]	Proctology	Arranged, 2 weeks, full time	25.00
	PSYCHOANALYTIC TRAINING		
Institute for Psychoanalytic Medicine of Southern California, 416 N. Bedford Dr., Beverly Hills	Psychoanalytic Training	September-June	[132]
Los Angeles Institute for Psychoanalysis, 344-346 N. Bedford Dr., Beverly Hills, Calif.	Psychoanalytic Training	September-June	[132]
San Francisco Psychoanalytic Institute, 2235 Post St., San Francisco 15	Psychoanalytic Training	September-June	[132]
Western New England Institute for Psychoanalysis, 340 Whitney Ave., New Haven 11, Conn.	Psychoanalytic Training	September-June	[132]
Washington Psychoanalytic Institute, 1720 M St., N. W., Washington 6, D. C.	Psychoanalytic Training	September-June	[132]
Chicago Institute for Psychoanalysis, 664 N. Michigan Ave., Chicago 11	Psychoanalytic Training	September-June	[132]
Topeka Institute for Psychoanalysis, 3617 W. Sixth Ave., Topeka, Kan.	Psychoanalytic Training	September-June	[132]
New Orleans Psychoanalytic Training Center, 1328 Aline St., New Orleans 15	Psychoanalytic Training	September-June	[132]
Baltimore Psychoanalytic Institute, 11 E. Chase St., Baltimore 2	Psychoanalytic Training	September-June	[132]
Boston Psychoanalytic Institute, 15 Commonwealth Ave., Boston 16	Psychoanalytic Training	September-June	[132]
Psychoanalytic Institute of the State University Medical Center at New York, 606 Winthrop St., Brooklyn 3	Psychoanalytic Training	September-June	[132]
American Institute for Psychoanalysis, 220 W. 98th St., New York 25	Psychoanalytic Process [117]	January 31, 15 weeks, part time	60.00
	Psychiatry and Psychoanalysis	January 31, 15 weeks, part time	45.00
	Readings in Psychoanalysis, Part III	February 1, 15 weeks, part time	45.00
	Continuous Case Seminar for Certified Analysts [118]	February 1, 10 weeks, part time	40.00
	Clinical Conferences on Case Histories II [119]	February 3, 15 weeks, part time	45.00
	Dreams in Psychoanalytic Therapy [117]	February 4, 12 weeks, part time	48.00
	Practice of Group Psychoanalysis	February 4, 10 weeks, part time	30.00
	Continuous Case Seminar [117]	February 17, 10 weeks, part time	40.00
At: New School for Social Research	Literary Figures in the Light of Modern Psychoanalysis	February 7, 15 weeks, part time	21.00
	Neuroses and Psychoses	February 8, 15 weeks, part time	21.00
Columbia University Psychoanalytic Clinic, Columbia-Presbyterian Medical Center, 630 W. 168th St., New York 32	Psychoanalytic Training	September-June	[132]
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Comprehensive Course in Psychoanalysis (dps 1066)	Arranged, 3 evenings, part time	500.00
New York Psychoanalytic Institute, 247 E. 82d St., New York 28	Psychoanalytic Training	September-June	[132]
Cleveland Psychoanalytic Training Center, University Hospitals, Department of Psychiatry, 2065 Adelbert Rd., Cleveland 6	Psychoanalytic Training	September-June	[132]

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
PSYCHOANALYTIC TRAINING—Continued			
Institute of the Philadelphia Association for Psychoanalysis, 122 S. 18th St., Philadelphia 3	Psychoanalytic Training	September-June	[132]
Philadelphia Psychoanalytic Institute, Medical Tower, Suite 2908, 255 S. 17th St., Philadelphia	Psychoanalytic Training	September-June	[132]
Seattle Psychoanalytic Training Center, Suite 203, 4710 University Way, Seattle 5	Psychoanalytic Training	September-June	[132]
PUBLIC HEALTH			
Los Angeles Childrens Hospital, 4614 Sunset Blvd., Los Angeles 27 [133]	Postgraduate Conference for Public Health Officers	March, June, September, 1 day, full time	None
Johns Hopkins University, School of Hygiene and Public Health, 615 N. Wolfe St., Baltimore 5	Master of Public Health	September, 8-11 months, full time	[120]
	Doctor of Public Health [122]	September, 1 year, full time	[120]
	Postgraduate Course in Public Health and Preventive Medicine	September, 8-11 months, full time	[120]
	Postgraduate Course in Public Health [121]	September, 1 year, full time	[120]
Columbia University School of Public Health, 630 W. 168th St., New York 32	Master of Public Health	September, 1 year, full time	$895.00
PULMONARY DISEASE			
American College of Chest Diseases, 112 E. Chestnut St., Chicago 11 [50] At: Bellevue-Stratford Hotel, Philadelphia, Pa.	Eighth Annual Postgraduate Course on Diseases of the Chest	March 7-11, full time	75.00
University of Kansas Medical Center, Kansas City [12,51]	Chest Disease	April 11-13, full time	30.00
Massachusetts Department of Public Health, State House, Boston At: Westfield State Sanatorium	Seminars on Tuberculosis	Monthly, 14 hours, part time	None
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32	Medicine PM 71—Diseases of the Chest	January 7-May 27, full time	100.00
	Medicine PM 80—Diseases of the Chest	February 1-28, full time	[123]
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York At: Metropolitan Hospital	Diseases of the Chest (dm 1027)	Arranged, 40 hours, part time	100.00
	Pulmonary Tuberculosis	Arranged, 3 weeks, part time	175.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	548-A Acute and Chronic Diseases of the Chest	April 11-May 23, part time	35.00
American Trudeau Society, 38 Church St., Saranac Lake, N. Y. [134] At: Boston City Hospital, Boston, Mass.	Measurement of Pulmonary Function in Health and Disease	March 21-25, full time	50.00
American Trudeau Society At: Trudeau-Saranac Institute, Saranac Lake, N. Y.	Postgraduate Course and Clinical Conference for General Practitioners	July 11-15, 5 days	40.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [63]	Diseases of the Chest	Arranged, 2 weeks, full time	25.00
RADIOLOGY			
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Fundamental Principles of Radioactivity Including Clinical Use of Radioisotopes	May 4-July 6, part time	700.00
University of Southern California School of Medicine, 2025 Zonal Ave., Los Angeles 33 At: Los Angeles County Hospital and Cedars of Lebanon Hospital	882: Essential Physics of Radiology	Spring, 12 weeks, part time	Not given
At: Los Angeles County Hospital	858: Diagnostic and Therapeutic Radiology	Arranged, 3-12 months, full time	[124]
Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn. [44]	Radiology 303, X-Ray Physics	January 6-March 10, part time	20.00
	Radiology 304, Radioactivity	March 17-May 19, part time	60.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical and Didactic Course in Diagnostic Roentgenology	January 3, February 28, and May 2, 2 weeks, full time	125.00
	Diagnostic Roentgenology	March 23, 10 days, part time	100.00
	Clinical Uses of Radio Isotopes	April 25, 2 weeks, full time	200.00
	Radium Therapy	May 23, 1 week, full time	100.00
	High and Low Voltage X-Ray Therapy	Arranged, 1 week or more, first of every week, full time	[125]
	Routine Clinical Course in Diagnostic Roentgenology and Fluoroscopy	Arranged, 2 weeks or more, first of every week, full time	70.00
	Diagnostic Roentgenology	Arranged, 8 months, full time	500.00
Northwestern University Medical Center, 303 E. Chicago Ave., Chicago	Radiation Physics	January-May, 1 evening weekly, part time	[126]
University of Kansas Medical Center, Kansas City	Radiology and Radioactive Isotopes [52]	February 14-17, full time	40.00
At: Providence and Bethany hospitals; St. Joseph's Hospital, Kansas City, Mo.; Independence (Mo.) Sanitarium	Diagnostic X-Ray and Fluoroscopy [12]	March 10-April 14, 1 day weekly, part time	25.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Peter Bent Brigham Hospital	General Radiology	Arranged, 1 or more months, full time	155.00
At: Massachusetts General Hospital	General Radiology	Arranged, 1 or more months, full time	155.00
At: Boston City Hospital	General Radiology	Arranged, 1 or more months, full time	155.00
At: Children's Hospital	General Radiology	Arranged, 1 or more months, full time	155.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor At: University Hospital	Diagnostic Radiology	April 4-8, full time	50.00
	Clinical Use of Radioactive Isotopes	Arranged, varying lengths of time	[127]
Wayne University College of Medicine, 1401 Rivard St., Detroit 7 At: Receiving Hospital	Medical X-Ray Conference	Second quarter, 3 times monthly, part time	15.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Radiology for General Physicians	April 11-13, full time	25.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	RADIOLOGY—Continued		
Joint Committee on Post-Graduate Medical Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[1]			
At: Jewish Hospital	X-Ray Diagnosis	April, 11 weeks, part time	$30.00
At: Beth-El Hospital	Roentgen Diagnosis in Gastroenterology	April, 8 weeks, part time	20.00
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32	Radiology PM 31—Radiology of the Chest	March 18-April 8, full time	25.00
	Radiology PM 32—Roentgen Diagnosis of Lesions of the Gastrointestinal Tract	March 14-25, full time	25.00
At: Mount Sinai Hospital	Radiology PM 33—Radium Therapy	April 19-May 27, part time	25.00
	Radiology PM 34—Differential Diagnosis in Radiology of the Chest	April 11-June 13, part time	50.00
	Radiology PM 35—Use of Radioactive Iodine	January-March, April-June, 3 months, part time	250.00
	Radiology PM 40—Clinical Use of Radioactive Isotopes	May 31-June 25, full time	200.00
	Radiology PM 51—Radiotherapy	Arranged, 6-12 months, full time	128
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Radiology	September, 8 months, full time	700.00
	Diagnostic Roentgenology (dr 1016) and Radium and Roentgen Therapy (dr 1026)	Arranged, part time	250.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Practical Course in Superficial and Deep X-Ray Therapy	Arranged, 4 weeks, part time	100.00
	Advanced Course in Radiotherapy	Arranged, 4 weeks, part time	100.00
	Roentgen Interpretation	January and April, 3 months, full time	300.00
	Advanced Diagnostic Roentgenology and Rodiotherapy	January and April, 3 months, full time	300.00
	Diagnostic Roentgenology and Radiation Therapy	January and April, 12 months, full time	1,000.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	654-A Radiobiology	January 27-June 9, part time	75.00
	5428-B Cardiac Roentgenology	February 3-4, full time	30.00
	652-A Roentgen Aspects of Diseases of Pancreas, Gall Bladder, Liver, and Spleen	May 4-6, full time	40.00
Robert A. Taft Sanitary Engineering Center, 4676 Columbia Parkway, Cincinnati 26 [62]	Radiological Health—Basic Course	January 10-21, full time and April 18-29, full time	None
	Radiation Hygiene—Preventive Medical Aspects	March 7-10, full time	None
Reed College, Portland 2, Ore.[54]	Radio-Biology	August 1, 6 months, full time	Not given
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1 [2]	Radiology	April 11-15, full time	50.00
University of Tennessee Medical College, 874 Union Ave., Memphis 3	Diagnostic Radiology	March 30-April 1, part time	50.00
Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tenn.[55]	Basic Course in Techniques of Using Radioisotopes	January 10-February 4, February 21-March 18, and April 18-May 13, full time	25.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25	Radiology [63]	Arranged, 1 week, full time	25.00
At: M. D. Anderson Hospital and Tumor Institute	Clinical Radiotherapy	January, 8 weeks, one day weekly, part time	10.00-15.00
	Radioisotope Techniques for Laboratory Technicians	March, 1 week, full time	Not given
At: Cactus Hotel, San Angelo	Fundamentals of X-Ray Interpretations	January-May, once monthly, part time	18.00
	SURGERY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Operative Surgery	March 23-June 8, once weekly, part time	200.00
	Thoracic Surgery	April 20-May 11, once weekly, part time	30.00
Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15	General Surgery and Surgical Anatomy	March 21-25, full time	100.00
University of California, Division of Postgraduate Medical Education, Medical Center, Los Angeles 24	Annual Surgical Lecture Series	February 9-April 27, part time	50.00
	Removal of Foreign Bodies from Lung and Bronchi	February 11-12, full time	80.00
	Plastic Repair of Superficial Wounds	April 22-23, full time	100.00
	Physiology, Anatomy, and Surgery	April 25-27, full time	100.00
	Techniques of Surgery of Malignancies of Oral Cavity, Maxilla, Parotid Gland, and Neck	April 29-30, full time	75.00
George Washington University School of Medicine, 1335 H St., N. W., Washington 5, D. C.			
At: George Washington University Hospital	Surgical Physiology	March 14-18, full time	75.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]	Surgery	April 7, full time	5.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Intensive Course in Surgical Technique	January 24, February 7, February 21, March 7, April 4, April 18, May 2, May 16, June 6, July 25, August 8, 2 weeks, full time	250.00
	Surgical Technique with Practice	February 9, 10 days, part time	250.00
	Course in General Surgery	February 14 and May 23, 1 week, full time	150.00
	Surgery of Colon and Rectum	February 28, April 11, May 9, June 13, 1 week, full time	125.00
	Surgical Technique, Clinical Surgery, Surgical Anatomy, Preoperative and Postoperative Management	March 7, June 6, August 8, 4 weeks, full time	325.00
	Clinical Surgery	March 23, 10 days, part time	150.00
	Surgical Diagnosis and Management	March 23, 10 days, part time	125.00
	Intensive Review Course Considering Basic Principles in General Surgery	March 28, 2 weeks, full time	200.00
	Gallbladder Surgery	April 11 and June 27, 3 days, full time	100.00

References will be found on page 1447.

Postgraduate Continuation Courses of Physicians—Jan. 1, 1955, to Sept. 1, 1955—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	SURGERY—Continued		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Surgical Technique with Practice	April 20, 5 days, part time	$125.00
	Course in General Surgery	April 25, 2 weeks, full time	250.00
	Thoracic Surgery	June 6, 1 week, full time	125.00
	Esophageal Surgery	June 13, 1 week, full time	150.00
	Breast and Thyroid Surgery	June 20, 1 week, full time	150.00
	Course in Treatment of Varicose Veins	Arranged, every three months, 2 days, full time	50.00
	Surgical Anatomy on the Cadaver, Clinical Surgery, Preoperative and Postoperative Management	March 21, June 20, August 22, 2 weeks, full time	150.00
University of Kansas Medical Center, Kansas City [56]	Surgery	January 17-20, full time	50.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Massachusetts General Hospital	General Surgery 1	May 31-June 25, full time	255.00
	General Surgery 2	Arranged, 3-9 months, full time	205.00
	General Surgery 3	Arranged, 12 months, full time	805.00
Wayne University College of Medicine, 1401 Rivard St., Detroit 7	Seminar	Second quarter, once weekly, part time	15.00
University of Minnesota, Center for Continuation Study, Minneapolis 14	Surgery for General Surgeons	May 26-28, full time	25.00
	Emergency Surgery for General Physicians	March 31-April 2, full time	25.00
Passaic County Medical Society, 625 Broadway, Paterson, N. J.	Trauma	April-May, once weekly, part time	Not given
Columbia University College of Physicians and Surgeons, 630 W. 68th St., New York 32 At: Columbia-Presbyterian Medical Center	Surgery GM 2—Principles of Cardiovascular Surgery	January 1, 6-12 months, full time [129]	150
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Surgery	September, 8 months, full time	900.00
	Surgical Aspects of Peripheral Vascular Diseases (ds 1016)	Arranged	200.00
	Peritoneoscopy (da 1036)	Arranged	100.00
	Surgical Technique (ds 1046)	Arranged, 50 hours, part time	375.00
	Thoracic Surgery (ds 1956)	Spring and fall, 3 weeks, full time	375.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Combined Surgical Course Including Cadaver Surgery and Gynecology	January and April, 2 months, full time	350.00
	Clinical Surgery	January and April, 4 weeks, full time	100.00
	Clinical and Operative (Cadaver) Surgery	January and April, 4 weeks, full time	200.00
	Thoracic Surgery	Arranged, part time	200.00
	Traumatic Surgery Including General Surgery, Orthopedic Surgery and Physical Medicine	Arranged, 2 months, part time	200.00
New York University-Bellevue Medical Center, 550 First Ave., New York 16	668-A Diagnosis and Treatment of Fractures and Dislocations	January 31-February 12, full time	125.00
	667-A Surgery of the Hand	March 21-26, full time	90.00
	662-A Basic Problems in Cancer Therapy (for Surgeons)	January 24-February 5, full time	200.00
	660-A Physiological and Pharmacological Principles Underlying the Surgical Management of Diseases of and Pertaining to the Parasympathetic and Sympathetic Nervous System	January 17-22, full time	150.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1 [2]	General Surgery	March 7-11, full time	50.00
University of Tennessee Medical College, 874 Union Ave., Memphis	Abdominal Surgery	March 16-18, part time	50.00
University of Washington School of Medicine, Seattle 5 [57]	Surgery	February 1-3, full time	25.00
University of Wisconsin Medical School, 418 N. Randall Ave., Madison 6 At: University Hospitals	Observation Course in Surgery	Arranged, 1 month, full time	100.00
Memorial Hospital, 23d and Evans, Cheyenne, Wyo.	Weekly Surgical Conference	Weekly, one day, part time	None
University of Toronto Faculty of Medicine, Toronto 5, Canada	Advanced Graduate Course	August 22-October 1 (tentative) full time	200.00
Royal Victoria Hospital Post-Graduate Board, Montreal 2, Canada	Postgraduate Course in Surgery [138]	August,[139] 7 weeks	Not given
	UROLOGY		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Practical Course in Cystoscopy	January 10, January 24, February 7, February 21, March 7, March 21, April 4, May 2, May 16, June 6, June 20, July 11, July 25, August 8, and August 22, 10 days, full time	150.00
	Intensive Course in Urology	April 18, 2 weeks, full time	225.00
State University of Iowa College of Medicine, Iowa City	Postgraduate Course in Urology	March 18-19, full time	15.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Urology	September, 8 months, full time	700.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Operative Surgery (Urological) for Specialists	Arranged, 2 months, part time	150.00
	Instrumental Urology	Arranged, 4 weeks, part time	100.00
New York University-Bellevue Medical Center, 550 First Ave., New York	674-A Refresher Course in Basic Urology	January 17-21, full time	60.00
	671-A Advanced Course in Urology (for Specialists)	April 4-29, full time	175.00
Oswald Swinney Lowsley Foundation for Urology, 451 W. 51st St., New York 21 At: St. Clares Hospital	Urology	Arranged, 1 year, full time	750.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25 [63]	Clinical Urology	Arranged, 2 weeks, full time	25.00
	VENEREAL DISEASE		
Department of Health, Education, and Welfare, Public Health Service, Washington 25, D. C.[58] At: Tulane University School of Medicine, New Orleans, La.	Venereal Disease Postgraduate Training Course for Physicians	February, 5 days, full time	None
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12	Venereal Disease	January 31-February 4, full time	None

References will be found on page 1447.

Sponsoring and Contributing Agencies

1. Joint Committee on Post-Graduate Education, Medical Society of the County of Kings, and State University of New York College of Medicine, New York.
2. State Board of Higher Education.
3. Washington State Medical Association and Washington State Department of Health.
4. Kansas Society of Anesthesiology, Kansas City Society of Anesthesiologists, Kansas Medical Society; Kansas State Board of Health, and University of Kansas School of Medicine.
5. American Academy of General Practice; Grady Memorial Hospital.
6. Los Angeles County Heart Association.
7. Kansas Medical Society, Kansas State Board of Health, Greater Kansas City (Mo.) Heart Association, and University of Kansas School of Medicine.
8. Minnesota Department of Health.
9. Minnesota Heart Association.
10. Heart Association of Albany County, Medical Society of the County of Albany, and New York State Department of Health.
11. New York State Department of Health.
12. Kansas State Board of Health, Kansas Medical Society, and University of Kansas School of Medicine.
13. Bingham Associates Fund.
14. Alameda—Contra Costa Medical Association and the Institute for Metabolic Research, and Highland Alameda County Hospital.
15. Temple University Hospital.
16. Ohio Academy of General Practice, local chapter.
17. Medical schools in Pennsylvania.
18. American College of Physicians.
19. American Cancer Society, Colorado division.
20. Indiana Cancer Society.
21. National Cancer Institute of the Public Health Service.
22. American Cancer Society, Wyoming division.
23. Society of Medical Technologists and American Society of Medical Technologists and Colorado State Society of Medical Technologists.
24. Tuskegee Institute.
25. Michigan State Medical Society, Wayne University College of Medicine, and Michigan Department of Health.
26. Wayne County Academy of General Practice and Grace Hospital.
27. American Cancer Society (North Branch) and Mound City Medical Forum.
28. New Jersey State Department of Health.
29. Wayne County Medical Society.
30. First District Medical Society.
31. Iredell-Alexander counties Medical Society.
32. American Academy of General Practice.
33. Alumni Association, Jefferson Medical College; and Ex Intern's and Ex Residents Society Jefferson Medical College Hospital.
34. Texas Chapters of the Academy of General Practice.
35. University of Wisconsin Medical School, Marquette University Medical School, Wisconsin Academy of General Practice, Wisconsin Heart Association, American Cancer Society, Anti-Tuberculosis Association, and American Arthritis and Rheumatism Foundation.
36. College of Physicians and Surgeons of Alberta.
37. Communicable Disease Center, Public Health Service, Chamblee, Ga.
38. Communicable Disease Center, Public Health Service, Atlanta, Ga.
39. Department of Mental Health of the State of Connecticut, Hartford; Department of Psychiatry, Yale University School of Medicine, New Haven; Bureau of Mental Hygiene of the State Department of Health, Hartford; and Institute of Living, Hartford.
40. Massachusetts Department of Mental Health.
41. University of Tennessee School of Medicine, Vanderbilt University School of Medicine, and Tennessee State Health Department.
42. Connecticut State Medical Society, Committee on Industrial Health; Fairfield Council Chapter; and American Academy of General Practice.
43. Colorado Ophthalmological Society.
44. Grace-New Haven Community Hospital, Hartford Hospital, and Connecticut State Medical Society.
45. Armed Forces Medical Services.
46. Kansas City O. O. R. L. Society, Kansas Medical Society, Kansas State Board of Health, and University of Kansas School of Medicine.
47. Los Angeles Academy of General Practice.
48. Colorado State Department of Public Health.
49. National Foundation for Infantile Paralysis.
50. Laennec Society of Philadelphia.
51. Kansas Tuberculosis and Health Association and University of Kansas School of Medicine.
52. Kansas Medical Society, Kansas State Board of Health, Kansas Radiological Society, Radiological Society of Greater Kansas City, and University of Kansas School of Medicine.
53. Public Health Service.
54. Armed Forces Special Weapons Project, Medical Branch.
55. U. S. Atomic Energy Commission, Oak Ridge, Tenn.
56. Kansas Medical Society, Kansas State Board of Health, University of Kansas School of Medicine Kansas Division, and American Cancer Society.
57. Seattle Surgical Society and Washington State Department of Health.
58. Louisiana State Department of Health, New Orleans.
131. Duval District Heart Association, Inc., Florida Medical Association, and Florida State Board of Health.
132a. Florida Medical Association and Florida State Board of Health.
133. University of Southern California School of Medicine and Maternal and Child Health, Division of State Department of Public Health.
134. Harvard Medical School, Tufts College Medical School, Boston University School of Medicine, and Harvard School of Public Health.
135. Maryland Academy of General Practice.
136. Temple University School of Medicine.
137. Ophthalmological Study Council.

Footnotes

59. Including room and board, $250.00.
60. Arranged according to time and content.
61. In preparation for examination of American Board of Surgery.
62. List of courses prepared by Subcommittee on Postgraduate Instruction and list of anesthesiologists offering programs available on request.
63. Scott and White Memorial Hospitals; Scott, Sherwood and Brindley Foundation; Temple Division; and University of Texas Postgraduate School of Medicine.
64. Open only to selected regular officers of the Armed Forces and certain government agencies. Open also to selected physicians participating in the MEND program and representing the AMA's Council on National Defense.
65. $52.00 per quarter (resident), $117.00 per quarter (nonresident).
66. Formal basic science course in preparation for specialty board certification.
67. Jan. 21-22; Feb. 18-19; March 18-19; April 22-23; May 20-21; and June 17-18, part time.
68. Physicians, registered nurses, and anesthetists in Cleveland area (Lorain, Cuyahoga, Geauga, Lake, and Ashtabula counties), $20.00; physicians, registered nurses and anesthetists outside Cleveland area, $40.00; and resident physicians and interns, no charge.
69. 2 weeks, $75.00; 4 weeks, $125.00.
70. Registration fee, $5.00; tuition, $600.00 for 9 months.
71. First day of any month.
72. $230.00 for 6 months; $460.00 for 12 months.
73. Members, $40.00; nonmembers, $75.00.
74. Registration fee, $5.00; tuition fee, $25.00.
75. $30.00 each course or $50.00 for both.
76. Degree "Doctor of Science in Industrial Medicine" conferred by Graduate School of Arts and Sciences, University of Cincinnati, on successful completion of course.
77. Fellowship stipend.
78. Members of American College of Physicians, $30.00; nonmembers, $60.00.
79. $125.00 per quarter; $12.00 per week for short periods.
80. 1st month, $150.00; 2nd month, $75.00; 3rd month, $50.00; 3 following months, $25.00 each; 6 months, $350.00; and 1 year, $450.00.
81. Beverly, Brockton, Cambridge, Fall River, Fitchburg, Gardner, Gloucester, Greenfield, Lawrence, Lowell, Lynn, New Bedford, Newton, North Adams, Salem, Springfield, Worcester, Pondville, Westfield.
82. $12.50 for the course; $6.00 per day.
83. This course has been planned especially for the physicians who want to write for the medical journals. It also deals with the preparation of books and addresses. The instructor, an experienced medical writer and editor, offers two weekly personal conference hours in addition to the formal course. Training in all phases of writing, planning, and editing is given. While they are not required to submit manuscripts, students are urged to do so.
84. Cost of breakfast.
85. Registration, $10.00; tuition, $10.00 a day.
86. $5.00 for nonmembers; no fee for members of Chicago Medical Society.
87. Alton, Belleville, Bloomington, Champaign, 3 in Chicago, Danville, Effingham, Elmhurst, Geneva, Herrin, Hinsdale, Joliet, Moline, Peoria, and Rockford.
88. $1.50 per hour per registrant. These courses are recognized for credit by the Massachusetts Academy of General Practice.
89. Alpena, Battle Creek, Bay City, Cadillac, Flint, Jackson, Lansing, Mt. Clemens, Muskegon, Port Huron, Traverse City, Escanaba, Houghton, Iron Mountain, Ironwood, Marquette, Menominee, and Sault Ste. Marie.
90. $5.00 registration fee for nonmember physicians. Formal lecture program for Seventh Annual Assembly.
91. Roanoke-Chowan Hospital, Ahoskie, N. C.; Chowan Hospital, Edenton, N. C.; and Virginia Dare Hotel, Elizabeth City, N. C.
92. Courses approved for postgraduate education by American Academy of General Practice.
93. $10.00 for 1 seminar; $25.00 for members of American Academy of General Practice and candidates and members of Southwestern Ohio Society of General Physicians, season fee; residents, interns, medical students, and nurses, no fee.
94. $10.00 for nonmember physicians.
95. The program is outlined with approximately 20 credit hours of course work, and an acceptable thesis leads to the degree of Master of Medical Science. The program is specifically designed to accommodate the candidate for specialty board certification. Certain specialty boards have extended credit for one year in lieu of a hospital residency to candidates successfully completing this program.
96. Sherman, Atlanta, Marshall, Abilene, Lubbock, Amarillo, and Longview.
97. March 27 and June 5; April 3; June 12; March 31 and May 19; March 24 and June 16; March 2 and May 11; and April 10.
98. Formal teaching credit by Wisconsin Academy of General Practice.
99. Part of eight postgraduate seminars offered by the Connecticut Postgraduate Seminar in Psychiatry and Neurology, Inc.
100. $100.00 a year.
101. Credit given by American Academy of General Practice.
102. Formal basic science course in preparation for residency training and ultimately specialty board certification.
103. Two courses: one in ophthalmology and one in otolaryngology.
104. One-half week, $40.00; one week, $75.00.
105. Fully accredited by the American Board of Orthopedic Surgery.
106. Registration fee, $5.00; tuition, $800.00 for 12 months.
107. Registration fee, $5.00; tuition, $200.00 for 3 months.
108. $20.00 for lay persons.
109. First day of any month.
110. Out of school 5 years or less, $5.00; over 5 years, $25.00.
111. 2 weeks, $60.00; 4 weeks, $100.00.
112. Covered by staff dues for staff members; others, minimal fee.
113. Registration fee, $5.00; tuition, $200.00 (3 months) or $400.00 (6 months).
114. $30.00 each course or $50.00 for both.
115. $2.00 per lecture; $15.00 per series of 8 lectures.
116. First day of any month.
117. Advanced candidates in training only.
118. Certified analysts only.
119. Candidates in training only.
120. $1,200.00 per year; $300.00 per quarter.
121. Designed primarily for persons doing research or teaching in the field of public health and preventive medicine.
122. Only physicians or specialists having the Master of Public Health degree are eligible to enroll in the Doctor of Public Health course.
123. $75.00 first month; $50.00 each additional month.
124. 3 months, $250.00; 6 months, $500.00; 12 months, $1,000.00. Designed for limited number of qualified physicians who wish to prepare for the American Board of Radiology or prepare for further training in radiology.
125. 1 week, $60.00; 2 weeks, $110.00; 1 month, $200.00.
126. $25.00, practicing physicians; $10.00, residents.
127. $50.00 per week.
128. $250.00 for 6 months; $500.00 for 12 months.
129. First day of any month.
130. $460.00 for 6 months.
132. Training is offered to graduates of medical schools who have fulfilled the other prerequisites of the American Psychoanalytic Association and of the individual Institute. Some of these Institutes also give informatory extension courses for physicians and qualified members of ancillary professions who do not intend to qualify for the practice of psychoanalysis. Further information, including fees and details of the curriculum will be provided on request by application to any individual Institute listed above or to the American Psychoanalytic Association, Central Office, 36 W. 44th St., New York 36.
138. Designed for candidates taking the F. R. C. S. (C) American Board of Surgery.
139. This course consists of three months' correspondence section answering written questions, and a seven weeks' didactic portion starting approximately mid-August.

LAW DEPARTMENT

MEDICOLEGAL ABSTRACT

Malpractice: Causal Connection Between Negligence and Injury.—This was a malpractice action against the defendant dentist. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court of Oregon.

The plaintiff, having suffered from pyorrhea for a number of years, went to the defendant dentist to have 17 teeth extracted. A general anesthetic was administered, the teeth extracted, false ones inserted, and the plaintiff was then walked to an adjoining recovery room and placed on a cot. The plaintiff's husband testified that the plaintiff was placed flat on her back on the cot, and it was the plaintiff's first contention that the defendant was negligent in placing the plaintiff on her back rather than on her side, she being in an unconscious condition, thereby causing foreign matter to pass down her trachea, which resulted in lung abscesses.

We have carefully searched the record, said the Supreme Court, and are unable to find any evidence from which the jury could find that the plaintiff was placed on her back when put on the cot. The only evidence touching on this question is that supplied by the plaintiff's husband, who testified that, after the nurse had come to the waiting room to invite him to the recovery room, he went into that room and found the plaintiff on her back with her head tilted to the right. Since proper practice would dictate that the plaintiff should be placed on her side, the presumption would be that the defendant did place the plaintiff in that position when she was laid on the cot. This presumption was fortified by the testimony of witnesses who stated that, although they had no recollection of the particulars of who placed the plaintiff on the cot or of in what position she was placed, the ordinary practice, which they follow, is to place a patient on her side with an emesis basin under her mouth for drainage; and that a patient afterward often turns over onto her back in attempting to get into the most comfortable position, which is in harmony with the well-recognized fact that even a person in deep sleep will do this. Since the plaintiff's head was tipped to the right, it is difficult to understand, as a practical matter, what difference it would make what position her body was in, since, in both instances, her head would be tipped over to the right, thus permitting drainage of secretions. We are of the opinion, the Supreme Court concluded, that the plaintiff failed to sustain the allegations of negligence.

Continuing, however, the court said that it would assume for the purpose of a discussion of proximate cause that the plaintiff's allegation of negligence was supported by substantial evidence warranting the submission of the case to the jury. So far as proximate cause is concerned, the plaintiff asserted that her being placed on her back following the extraction in the manner alleged was responsible for foreign matter draining down through her windpipe into her lungs, thus causing the abscesses in her right lung.

Before proceeding to analyze the testimony, said the Supreme Court, we call attention to the fact that there was no direct evidence that any foreign substance went down the plaintiff's trachea into her lungs, or that such foreign material was infectious, or that such foreign matter infected the plaintiff's lung to the extent of causing the plaintiff's abscesses. The purport of one of the plaintiff's witnesses who had operated on the plaintiff some three months after the extraction was that when he operated he found that the plaintiff had an abscess in her lung; that, since she was on her back in an unconscious condition for five minutes after her teeth were extracted, she having pyorrhea, infected material in all probability was aspirated through her windpipe into her lungs; and that such infected material caused the abscesses. As against this supposition or inference, said the court, we have the testimony of the same witness that there could have been aspirations into her lungs while her teeth were being extracted, while she was being taken into the recovery room after the extraction, during the night while she was asleep, with or without extraction of teeth, or through pyorrheal infection entering the blood stream and finally lodging in her lungs. The legal question, said the court, is whether or not, in view of the foregoing testimony, the proximate cause of the abscess was the placing of the plaintiff on her back on the cot in an unconscious condition following the extraction of her teeth.

It is the defendant's position that the plaintiff's entire case of proximate cause is predicated upon an inference on an inference. It is urged that the only established fact is that the plaintiff had an abscess and that, to arrive at the conclusion that such abscess was caused by the plaintiff's position on her back, the following inferences must be indulged in: (1) that foreign matter got into the plaintiff's trachea, (2) that such matter proceeded into the plaintiff's lungs, (3) that such matter was infectious, and (4) that such infectious material caused the abscess.

In this case, said the Supreme Court, the only known or proved fact is that the plaintiff had an abscess, and, to arrive at the conclusion that such abscess was caused by the improper position of the plaintiff on her back, the plaintiff's witness had to indulge in the several inferences previously mentioned. It is well known that a person may suffer an abscess from various causes, and to say that the plaintiff's abscesses were caused in the manner stated by the witness would be pure conjecture and highly speculative. In conclusion, the court said that when an alleged injury may have been due to one of several causes, any one of which may have been the sole proximate cause, there can be no recovery unless it is shown that, as between the two or more causes in question, it was the negligence of the defendant that caused the injury.

Accordingly the judgment of the trial court in favor of the plaintiff was reversed with instructions to enter judgment in favor of the defendant physician. *Wintersteen v. Semler, 250 P. (2d) 420 (Ore., 1952).*

BUSINESS PRACTICE

INSURANCE FOR THE PHYSICIAN

J. Dewey Dorsett, New York

In the field of insurance an ounce of forethought can prevent an expensive and possibly disastrous loss. Situations change constantly, as do the type and amount of property owned and activities engaged in; exposure to risks and need for coverages change with them. Periodic check-ups are highly desirable. No physician wants to spend his limited spare time reading policies, and it is not essential that he do so. Nor does he have to try to become an insurance expert. He does not need to know the technical aspects, the rationale of the law of large numbers and adverse selection, or the difference between facultative and treaty reinsurance. But he should know enough to avoid learning the hard way, by having a loss and finding a coverage deficiency. The insurance requirements of a physician in connection with his practice may be classified into three broad categories: (1) insurance against loss by reason of legal liability for bodily injury or death to third persons, including employees; (2) insurance against loss of, or damage to, property owned by the physician; and (3) insurance providing reimbursement for unusual medical expense, hospital expenses, and loss or reduction of income due to illness or accident.

LIABILITY INSURANCE

Liability insurance is protection against possible suits brought by third persons for bodily injury or death and against judgments obtained in such suits. A liability insurer agrees to defend the insured if he is sued as a result of an accident or occurrence coming within the scope of the policy, including groundless or fraudulent claims. If a judgment is obtained, the insurer will pay

General Manager, Association of Casualty and Surety Companies.

amounts up to the limits specified in the policy and will also pay the defense costs. A physician needs protection against three kinds of possible liability: (1) professional (malpractice) liability, (2) general and employers' liability, and (3) automobile liability. Professional liability insurance will not be discussed here, since it is a subject for separate treatment by an expert in the field.

Personal Liability.—A physician may be sued for damages arising from any of a multitude of possible occurrences not growing out of the actual rendering of professional service and, therefore, not covered by the professional liability policy. These occurrences may be negligent acts or omissions of the physician, not related to his profession, or of his employees or agents or persons acting in his behalf. Following are examples of occurrences that may result in injury or property damage to some third persons, who may sue:

Falls on slippery floors, over rugs, on stairs with bad treads or improper illumination, or on slippery or icy sidewalks, steps, or porches, or any injury due to faulty condition or disrepair of property, inside or outside of the house or office.

Injury due to toys, broken glass, or other objects left around by children or others.

Oil burner explosions.

Spread of a fire negligently started on the insured premises.

Objects accidentally dropped from a window.

Basement accidents to delivery men, meter readers, or repairmen due to poor lighting, greasy or littered floors, low-hanging pipes, etc.

Injuries to neighbors' children playing on insured's swings, lawn gyms, etc.—insured being liable on "attractive nuisance" theory.

Dog bites.

Injury from an umbrella.

Injury resulting from sports activities, such as golf, hunting, or fishing.

Insured's child injuring another with bow and arrow, rifle, or other toy supplied by parent.

The liability from all these hazards and many others may be covered under a very broad policy called the "comprehensive personal liability policy." This policy is designed primarily to cover liability arising from nonbusiness activities, but it may be extended, for an additional premium, to cover office occupancy. It covers all liability (except that mentioned below as excluded) for personal injury to others or for damage to property of others, up to the maximum amount stated in the policy for each occurrence. The basic limit is $10,000 for each occurrence. This amount may be increased for a moderate additional premium. Every physician should carry higher limits, especially in these days of inflation and jumbo jury awards, since the insured is personally liable for all of the judgment that exceeds the policy limit. A provision for medical payments to third persons accidentally injured is included in this policy. The provision has certain limitations but is nevertheless an important aspect of the policy, since benefits are payable regardless of fault or liability. The basic limit on medical payments is $250 per person injured, and this amount may be increased for an additional premium. The comprehensive personal liability policy covers not only the liability of the named insured person but also of his spouse and of relatives of either, if residents of the same household. It covers all premises where the named insured person or his spouse maintains a residence, except business property or farms. The policy may be endorsed to cover private dwellings that the insured rents to others.

The policy does not cover rendering of professional services. That is the function of professional liability insurance. It does not apply to ownership or use of motor vehicles while away from the insured premises, nor to use of watercraft, with certain exceptions. It does not apply to injuries, sickness, disease, death, or destruction caused intentionally by the insured or at his direction. It does not apply to injury or destruction of property used by, rented to, or in the care, custody, or control of the insured. A physician may become liable for an injury sustained by his employee while working. The comprehensive personal liability policy covers such liability as a general rule, but it excludes injury to an employee if benefits are payable, or required to be provided, under a workmen's compensation law. A physician may, in certain states, depending usually on the number of his employees, be subject to the workmen's compensation law. If he is, he should carry workmen's compensation insurance. Since the workmen's compensation laws of the various states differ greatly in regard to employments subject to the law, the matter should be checked locally.

Automobile Liability.—Since general liability insurance policies do not cover liability resulting from ownership or operation of automobiles away from the insured premises, automobile liability insurance is a necessary coverage. Most physicians are acquainted with its importance. A motorist is not required by law to carry such insurance (except in Massachusetts), but serious consequences can follow if he is involved in an accident without having insurance in effect at the time. Aside from the possibility of a judgment against him for a large sum of money, an owner or operator may lose his license to drive and his right to have motor vehicles registered in his name. The automobile liability policy is standardized, and nearly all companies use the same policy form. It provides broad protection. In addition to normal operations, it covers the insured person and his spouse in the temporary, occasional use of automobiles owned by others; it covers any liability that may result from the operation of the insured car by others, for example, members of the insured person's family, employees, or friends to whom the car is loaned; and it provides for payment of the premium on any bond required to release the car from attachment and the cost (up to $100) of a bail bond.

Every physician should be sure that the liability limits in his policy are high enough to cover the large payment that may be named in judgment in the event of serious injury. With his automobile liability insurance a car owner may purchase medical payments coverage, which pays medical, ambulance, hospital, and nursing expenses of anyone (including the insured) injured while riding in the car or while entering or leaving, regardless of who was at fault. This coverage has recently been broadened to include injury to the insured, or any member of his household, in *any* automobile accident, whether the injured person is a passenger or a pedestrian. If a physician has an employee who uses his own automobile, he may also need nonownership liability insurance, since a possible liability may arise if the employee has an accident while the car is being used in connection with the employment.

PROPERTY INSURANCE

Automobile Damage.—Loss of and damage to the insured person's motor vehicle as a result of collision, fire, theft, or other cause may be covered in the same policy that covers automobile liability. The distinction between automobile liability insurance and collision insurance should be mentioned, since the two are frequently confused. Collision insurance protects the owner if his own car is damaged by collision with an object or another car. It does not protect the owner against liability in the event his car damages one owned by another person. That is the function of liability insurance, which has just been discussed. Collision insurance is almost invariably written with a specified sum deductible—$50, $100, or more—which means that the insured is covered only for the amount of damage that exceeds the deductible amount. Collision is, of course, not the only way in which a car may be damaged. Comprehensive physical damage insurance provides coverage for virtually all other risks, including fire, theft, explosion, windstorm, flood, vandalism, damage from missiles and falling objects, breakage of glass, and others.

Fire.—Aside from his automobile, a physician has a substantial investment in other types of property, and any of a large variety of perils may result in loss of or damage to such property. An important and well-known peril is fire. The need for this coverage on office furniture, professional equipment, and the building, if owned by the physician, is obvious, but it is worth while to comment on the amount of such insurance that should be purchased, since many costly mistakes result from insufficient attention to that detail and failure to make periodic check-ups. It is a waste of money to buy fire insurance in an amount exceeding the value of the property. On the other hand,

purchase of an insufficient amount often places the insured in a position of not being able to collect in full even a partial loss that amounts to less than the face value of the policy.

An insurance company will never knowingly sell a person an amount of insurance exceeding the value of the property insured. In fact, an underwriter would be very suspicious of anyone who applied for an obviously excessive amount. But a company cannot make an appraisal of property to be covered each time it writes or renews a policy, since the cost of such appraisals would often exceed the premium, and during the period of coverage the property may be replaced or added to. The responsibility is, therefore, on the applicant for insurance to decide on the amount he needs. The company will not pay more than the actual cash value at the time of the loss even when the destruction is total and the face amount of the policy exceeds the total amount of damage. Actual cash value means replacement cost less reasonable physical depreciation. The so-called co-insurance provision of the fire policy is one that is not generally understood by insured persons. It applies when the total amount of insurance is less than a specified percentage (usually 80%) of the total value of the property. When the amount of insurance is lower than the specified percentage of property value, the insured is deemed to be insurer of part of the risk himself. If a partial loss occurs the company will not pay for all of it. For example, if property is worth $10,000 and the co-insurance percentage is 80%, $8,000 of insurance must be carried to avoid the penalty of the provision. If only $4,000 of insurance were carried and a loss of $1,000 occurred, the insured could collect only $500. The coverage of a fire policy may be enlarged by the addition of an extended coverage endorsement. This adds insurance against loss from windstorm, hail, explosion, vehicles, falling aircraft, and smoke, among other perils. Protection against vandalism, malicious mischief, glass breakage, and certain kinds of water damage, among other things, may be added by so-called additional extended coverage endorsement.

Theft and Loss.—Property in a physician's office may also be lost or damaged by criminal acts, such as burglary, robbery, or theft. The office burglary and robbery policy provides protection against loss of money, equipment, supplies, furnishings, and other property due to theft, burglary, or holdup of the premises and against damage to the property caused by burglary or robbery. It also covers, among other things, robbery outside the premises from a messenger conveying the property, for example, to a bank. A physician who desires coverage against loss due to dishonesty of an office employee may obtain such protection by means of a fidelity bond. Loss of or damage to instruments or equipment customarily carried about by a physician while making calls to homes or hospitals may be covered by a physicians' and surgeons' equipment floater. This policy insures against all risks of loss, whether occurring in or out of the office, with only minor exceptions.

ACCIDENT, HEALTH, AND MEDICAL EXPENSE INSURANCE

So far this article has outlined various coverages that afford one protection in case of loss of or damage to property or in case of suit brought against one. There is another hazard against which a physician may and should protect himself—the danger of loss of income and depletion of savings as a result of accidents or illness. For the physician and his family the likelihood of large medical expense is not as great as for persons in other professions or vocations. Nevertheless, the impact of a physician's illness may be more serious than for most others, since his income stops immediately when accident or illness prevents him from performing his professional duties but his overhead and living expenses continue. The emphasis of this discussion will therefore be on protection against loss of income, the feature of the policy that pays weekly or monthly amounts in the event of inability to perform duties, but brief mention will be made of insurance providing indemnity for medical, surgical, and hospital expense.

Catastrophe Coverage.—An important recent development in this field is insurance against extraordinary expense, sometimes called catastrophe medical coverage. As every physician knows, protracted serious illness can indeed be financially catastrophic to anyone but a very wealthy person. These policies pay all medical, hospital, and surgical expenses of the insured person or members of his family up to a maximum amount stated in the policy, which might be $5,000 or more. However, they do not pay medical expenses that amount to less than the deductible amount stated in the policy, which may be $300 or $500. Most of these policies contain a co-insurance provision under which the insured must pay a certain percentage (generally 20 or 25%) of the total expense above the deductible amount. For example, if the aggregate medical and hospital expenses of an illness amounted to $6,700, a policy with a $5,000 limit, $300 deductible, and a 25% co-insurance provision would pay $4,800 (75% of all expenses above $300). This is a useful type of policy. It does not cover minor losses that the average person can absorb but is applicable only to major medical expenses, the kind that may exhaust savings and put a family into debt.

Accident and Health.—Now consider policies that provide indemnity for loss of time due to accident or illness. Unlike automobile insurance and certain other types, there is no standardization of forms in the accident and health insurance field. These policies can be tailored to meet individual needs and desires. For example, it is possible to obtain a policy that pays benefits starting from the very first day of disability due to accident or from the eighth day of disability due to illness. Obviously, policies that have no waiting period, or only a very short one, and therefore apply to minor accidents or illnesses are more expensive than policies that have a two or three week waiting period. It is suggested that a person who would not be seriously inconvenienced by a two or three week loss of time accept a longer waiting period and that the premium savings be used either to increase the amount payable for loss of time to a figure as near as possible to 80% of net earned income or to increase the maximum period during which benefits will be paid. Policies are available that will pay benefits for life in event of total and continuous disability due to accident and for periods up to two years or more for continuous total disability caused by illness.

It is desirable to obtain this type of insurance through a group, for example, through a medical association. If a suitable group policy is not available, a competent and well-recommended broker or agent of an insurance company licensed in the state should be consulted. Insurance companies that sell this insurance by mail are sometimes not licensed in every state in which their policies are sold, and they may not be subject to regulation by the insurance department of the state in which a particular policyholder resides nor be subject to suit in that state. Because of their variations, accident and health insurance policies must be carefully studied in each case. The insurance representative should be specifically questioned about the exclusions. Following are some points to be considered in connection with the purchase of this type of insurance: 1. The amount payable weekly should be large enough to take care of the policyholder's needs, and it should be payable for an adequate period. 2. The health coverage should be applicable not merely to specifically listed diseases but to all diseases, subject only to minor exclusions, and the accident coverage should be applicable to accidents generally, not merely specific types such as accidents on common carriers. 3. The health coverage may or may not be restricted to illnesses requiring house confinement. Policies covering nonconfining illness are somewhat more expensive, owing to the additional coverage provided. 4. The accident coverage may or may not apply to partial as well as total disability. 5. The policy (if an individual policy) may contain a time limit after which the company cannot deny liability on the ground that the disease existed before the policy became effective.

While insurance may not be quite as complex as the human body, this discussion should clearly indicate that self-diagnosis of needs and self-prescription of protective measures may result in costly mistakes. Consultation with the insurance specialist is indicated.

60 John St. (38).

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Hypopituitarism in the Adult. G. F. Koepf and C. B. Vieillard. New York J. Med. **54**:2429-2440 (Sept. 1) 1954 [New York].

Experience with 30 adult patients with hypopituitarism is described. Many of them were observed for as long as 13 years. Thyroid deficiency was present in 23 patients, gonadal deficiency in 24, and adrenalcortical deficiency in 29. Only one patient was deficient in only one category (adrenal); seven were deficient in only two of the three target glands. Seven patients had diabetes insipidus; proper hormone replacement therapy obviated this disorder, and vasopressin therapy was not necessary. There were two deaths in the series, one from Hodgkin's disease involving the pituitary gland and the other following surgical removal of a chromophobe adenoma in a patient with advanced atherosclerosis, severe myocardial degeneration, and dermatomyositis. Favorable results were obtained in the remaining 28 patients with hypopituitarism of varying origin (8 postpartum hemorrhages, 12 tumors, and 8 undetermined) through selective replacement of the deficient target gland hormones. Treatment was highly individualized. In 16 cases in which androgen and desoxycorticosterone therapy was required, it was found that suspensions of desoxycorticosterone acetate (Percorten) trimethylacetate and testosterone isobutyrate or phenylacetate injected intramuscularly at 30 day intervals were effective and convenient. Hypopituitary coma was assumed to be caused by adrenalcortical failure and was treated accordingly.

Cerebral Hemodynamic Studies on Hypertensive-Atherosclerotic Subjects During Hexamethonium Therapy. J. Kleh and J. F. Fazekas. M. Ann. District of Columbia **23**:480-482 (Sept.) 1954 [Washington, D. C.].

The reduction of blood pressure of elderly hypertensive subjects with hexamethonium salts has been either discouraged or caution has been advised in its use because of possible cerebral, cardiac, or renal complications. The authors present observations on eight patients with the hypertensive, cerebral atherosclerotic syndrome who were treated with hexamethonium chloride. Cerebral hemodynamic and metabolic studies were done on all patients prior to therapy. In order to estimate the dose of hexamethonium required, the method of intravenous titration as recommended by Freis was followed. Since it has been shown that the cerebral metabolic rate does not change significantly with an acute reduction of pressure, the rate of cerebral blood flow was estimated from the observed cerebral arteriovenous oxygen differences and the previously obtained cerebral metabolic rate. The cerebral arteriovenous oxygen differences were determined immediately prior to the intravenous administration of hexamethonium chloride and at the time of maximum depression of mean arterial pressure. Hexamethonium was administered at the rate of 1 mg. of the ion per minute until the mean arterial pressure fell to normotensive levels. In some subjects the mean arterial pressure, nevertheless, continued to fall, and, if signs of cerebral vascular insufficiency became manifest, the patient was immediately placed in the Trendelenburg position. In order to study the effects of gradual reduction of pressure, increasing doses of hexamethonium were administered subcutaneously twice daily until the majority of blood pressure readings fell to approximately normotensive levels with the patient in the supine position. This dosage was continued from 10 to 27 days, after which studies of cerebral hemodynamics and metabolism were repeated. It was found that on acute reduction of blood pressure with hexamethonium chloride all patients had signs of cerebral ischemia and significant reduction of the rate of cerebral blood flow. With repeated administration of this drug in doses sufficient to reduce the pressure to normotensive levels these manifestations persisted in four patients despite a rate for cerebral blood flow not significantly different from that prior to therapy. These studies indicate that even a gradual reduction of pressure with hexamethonium may be hazardous in these patients.

Late Results of Treatment in Myocardial Infarction: Effect of Short-Term Anticoagulant Therapy on Mortality at One Year. G. R. Tudhope and A. C. Donald. Lancet **2**:465-468 (Sept. 4) 1954 [London, England].

This report deals with 100 patients with acute myocardial infarction, all of whom received anticoagulant therapy during their stay in hospital and were followed up for a year after the onset of illness. The hospital mortality in the first month after the onset of infarction was 9%, deaths within the first 12 hours after admission being excluded. The total mortality at one year was 18%. A comparison of these figures with those obtained in patients treated without anticoagulants suggests that a patient who has been treated with anticoagulants and has survived for a month has a better prognosis than a patient who has survived the acute illness without anticoagulant therapy. Much more evidence is required to establish this point. It is important to discover whether the late mortality could be further reduced by following up the treatment of the acute illness in hospital with long-term outpatient anticoagulant therapy.

Peritoneoscopy as Diagnostic Adjunct in Gastroenterology. R. B. Hope. Am. J. Gastroenterol. **22**:221-230 (Sept.) 1954 [New York].

Peritoneoscopy by means of an optical instrument is a most useful adjunct in the differential diagnosis of abdominal disease. It should be carried out under aseptic conditions in an operating room that can be darkened and on a table that will tilt not only in the Trendelenburg position but also from side to side. The patient should be prepared by an enema the night before; the stomach and bladder should be empty. Patients should not be given too much medication, because many of them are elderly, debilitated, and often have advanced liver disease. In adults the examination is carried out under local anesthesia, with 1% of procaine hydrochloride, without epinephrine, in sufficient amount to infiltrate all layers down to and including the peritoneum. A stab wound is made through the skin, deep enough to just nick the rectus fascia. The usual site is just below the umbilicus, except in children, in which case the author passes the scope through the rectus muscle. It is important to select a site well away from any old operative scar. The pneumoperitoneum needle is inserted through this stab wound and swept around to test for adhesions. Air is then pumped into the abdominal cavity till it is quite tense; this lifts the wall away from the viscera and makes it safe to insert the trocar and sheath. Any fluid present is removed through the aspirator under suction; the visual telescope is installed and the abdomen explored. It is best to make a routine sweep of the abdomen, inspecting viscera and parietal peritoneum alike, then to go back and spend time inspecting organs or pathological conditions. After exploration, biopsies are taken under direct vision, and the biopsy site is coagulated when bleeding occurs. The air is allowed to escape through the instrument, which is then withdrawn and the wound closed with a single skin suture. The patient is requested to stay flat for six or eight hours until any air that did not escape is absorbed. This diagnostic procedure is contraindicated in acute inflammatory conditions and in obstruction

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The place of publication of the periodicals appears in brackets preceding each abstract.

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with abdominal distension. Peritoneoscopy was not designed to supplant laparotomy, but in many cases it can answer a diagnostic problem as well as and often better than the purely exploratory laparotomy. The value of the procedure is demonstrated on the basis of 12 case histories that were selected from the author's files. He has used peritoneoscopy for 20 years. It is the most valuable single diagnostic procedure for the study of liver disease, and, when done by an experienced physician with biopsy being obtained, it will yield a higher percentage of correct diagnoses than all other diagnostic procedures put together. In liver disease a good look plus an adequate biopsy is worth a score of the laboratory procedures. The gallbladder can be visualized in the majority of cases, and it cannot only be seen but can be palpated with the tip of the examining telescope and can be transilluminated. Direct cholangiography under peritoneoscopic visualization has been done in a fairly large series of cases. Diagnostic help in splenic disease is mainly in gross appearance. Occasionally peritoneoscopy is of aid in diagnosing disease of the colon.

Anticoagulants in Coronary Disease. A. R. Gilchrist and J. A. Tulloch. Brit. M. J. **2**:720-724 (Sept. 25) 1954 [London, England].

In acute myocardial infarction, a disease varying greatly in severity from attack to attack, clinical recognition of infarct formation depends more on the metabolic derangements accompanying tissue necrosis than on the duration and severity of the pain, dyspnea, or syncope that may mark the onset of an attack. Fever, leukocytosis, elevated sedimentation rate, increased serum fibrinogen, and augmented excretion of urinary urobilinogen are indications of the body's general reaction to myocardial necrosis. Anticoagulant drugs, used early and efficiently and continued for a minimum of four weeks under strict laboratory control, are capable of halving the death rate and reducing the incidence of thromboembolic episodes commonly observed during the first six weeks of the illness. These facts were shown in the authors' seven year experience with 321 consecutive hospitalized patients with acute myocardial infarction. The reduced frequency of thromboembolic lesions with anticoagulant therapy was proved by autopsy experience. The over-all reduction in mortality cannot be attributed solely to the decrease in frank thromboembolic deaths; it appears that the severer grades of cardiogenic shock are favorably influenced by these drugs. A claim can be made for the prompt use of anticoagulants when a succession of attacks of acute coronary insufficiency suggests that myocardial infarction is imminent. There is also a justification for their use in selected patients on a long-term basis in the hope of preventing recurrences among those who have already sustained one or more myocardial infarcts.

Pseudomembranous Enterocolitis: Medical Treatment, with Recovery. R. E. Nyhus and E. C. Burke. Proc. Staff Meet., Mayo Clin. **29**:513-518 (Sept. 1) 1954 [Rochester, Minn.].

Nyhus and Burke present the case of a 9-year-old boy in whom micrococcic (staphylococcic) enteritis and pseudomembranous ileocolitis developed after prolonged treatment (16 days) with antibiotics, particularly chlortetracycline (Aureomycin). Diarrhea, vomiting, and fever had developed four days prior to the time when he was seen by the authors, and when he came under their care he was acutely ill, had a low fluid balance, was cyanosed and semicomatose. Two hours after admission the patient's temperature rose to 107 F rectally and his blood pressure was unobtainable. During the first 24 hours the patient received 4 liters of one-third normal solution of sodium chloride, with 26 mEq. per liter of sodium lactate added. In addition, he received 200 mg. of hydrocortisone given intravenously, 200 mg. of hydrocortisone given intramuscularly, 1 gm. of erythromycin given intravenously, 1,000,000 units of penicillin given intravenously, 8 mg. of arterenol given intravenously, and 400 cc. of whole blood. His blood pressure rose. Twenty-four hours after admission the patient passed what appeared to be about 18 in. (45.7 cm.) of enteric mucous membrane in a liquid stool. His course after this was one of gradual improvement. A diagnosis of micrococcic enteritis was made on the basis of gram-stained smears of the stools and culture of specimens of stools. A diagnosis of pseudomembranous ileocolitis was made on the basis of the clinical picture and an 18 in. (45.7 cm.) pseudomembranous cast of the colon that was passed per rectum.

Malignant Degeneration in Atrophy of Stomach and Pernicious Anemia. D. Niemetz and F. B. Mead. Am. J. Gastroenterol. **22**:217-220 (Sept.) 1954 [New York].

In order to determine the incidence of carcinoma of the stomach in patients with atrophic gastric mucosa, 110 patients, all of whom showed this change, were examined. Eighty-five had pernicious anemia, while the remaining 25 showed only gastric mucosal atrophy. Careful study of the history of each of the 110 patients from the time of first admission to final outcome yielded three cases of gastric malignant disease. In one of these a histological diagnosis of plasma cell cytoma was established following gastric resection, while, in the second case the autopsy diagnosis was leiomyosarcoma. In the third patient a roentgenographic diagnosis of gastric neoplasm was made. All three of the patients with gastric neoplasms had pernicious anemia, whereas no malignant gastric neoplasm was found in 25 patients who had mucosal atrophy but not pernicious anemia. Reports in the medical literature indicate that gastric carcinoma develops in from 3 to 10% of patients with pernicious anemia.

Portal Systemic Encephalopathy: Neurological Complications of Liver Disease. S. Sherlock, W. H. J. Summerskill, L. P. White and E. A. Phear. Lancet **2**:453-457 (Sept. 4) 1954 [London, England].

The histories of 18 patients with liver disease and neurological signs are described. Three groups of patients are differentiated depending on whether the neurological changes were persistent, transient, or terminal. The five patients with persistent neurological disturbances showed constant though variable neurological abnormalities over periods ranging from eight months to more than three years. The transient neurological disturbances, which were observed in seven patients, did not exceed a week; complete recovery followed. Changes were often mild and could be assessed only by frequent neurological examination; the fully developed picture seen in the group with chronic illness was observed in only one patient. In the six patients in whom the neurological disturbances were terminal there usually existed severe hepatocellular failure, and death ensued within eight days. The early onset of coma often modified the personality changes and motor disorder. Four patients had portal cirrhosis, which in one was complicated by hepatoma. In another patient Chiari's syndrome developed secondary to renal carcinoma, and another patient died from serum hepatitis. The neurological complications suggest a common basis despite the varied cause and extent of the liver disease. Clouding of consciousness occurred in all patients. Extreme emotional lability was sometimes the first sign of deterioration. Facial expression became vacant, salivation increased, and speech was slow, slurred, and increasingly restricted to the repetition of a few irrational phrases. Simultaneously, comprehension became clouded, so that socially bizarre behavior, exemplified by lack of restraint, nocturnal ramblings, and a peculiar tendency to evacuate bladder and colon in inappropriate places created embarrassing situations. The episodes were of variable duration, and patients had no recollection of their actions. Recovery was often rapid, consciousness returning before other neurological signs abated. A disorder of the motor system was present in every patient. The most characteristic was "flapping" tremor, which was best demonstrated with the patient's arm outstretched and fingers separated as a series of rapid flexion-extension movements at the metacarpophalangeal and wrist joints accompanied often by lateral movements of the digits. The syndrome was associated with thrombotic occlusion of the portal vein in patients with cirrhosis of the liver or arose as a sequel to portal-systemic shunt operations. Evidence is advanced that nitrogenous substances of portal venous origin, normally metabolized in the liver, may reach the systemic circulation through a damaged liver, through portal collateral channels, or through both and cause a cerebral disturbance (portal-systemic encephalopathy). The nature of the metabolic disorder is considered, with particular reference to deranged ammonia metabolism. The authors found elevated blood-ammonium levels with the patients fasting

and were able to reproduce the neurological disturbance by the use of a high-protein diet and administration of ammonium chloride. The raised level of ammonium in the cerebrospinal fluid is further evidence of disturbed ammonium metabolism. If a specific exciting agent can be identified it should be withdrawn or treated. Caloric requirements should be supplied with glucose, and nitrogen intake, whether in food or drugs, should be reduced to a minimum. Patients with persistent neurological disorder respond well when given a diet with the lowest protein intake compatible with mental and nitrogenous equilibrium.

Madelung's Disease and Hypophysial-Hypothalamic Insufficiency. R. Suárez González. An. Soc. biol. Bogotá. **6:**162-168 (July) 1954 (In Spanish) [Bogotá, Colombia].

Multiple symmetrical lipomatosis on the neck, shoulders, and back (Madelung's disease) is extremely rare. The disease develops in young adults who live in the mountains or in regions of endemic cretinism and who have congenital endocrinopathies, goiter, and signs of hypophysial insufficiency such as diabetes insipidus. The subject of this report is a Negro man 23 years old with hypophysial-hypothalamic insufficiency and the typical form of the disease, which started when the patient was 10 years old. At present, lipomatosis is diffused from temples to chin and cheeks. There is bilateral exophthalmos due to accumulation of retrobulbar fat tissue. The facial features disappeared, and the enormous lipomatous masses of the cheeks, neck, and chin rest on the shoulders and chest of the patient and have converted his face to one similar to that of a monster. The short stature of the patient, his feminine constitution, type, and distribution of hair, high pitched voice, infantile mentality, and lack of sexual development are symptoms of hypophysial insufficiency. Roentgen examination of the head showed a small sella turcica and hypoplasia of the upper maxillary bones. Surgical removal of the lipomatous masses in several sessions was planned, and the operation was attempted. It was observed that the involvement of muscles, blood vessels, and cervicofacial nerves in the lipomatous tissues made the operation incompatible with anatomic integrity. The anatomicopathological study of a portion of lipoma removed during the attempted operation showed pure lipoma without any lymphoid structure. The patient will be treated for one year with dried thyroid and chorionic gonadotrophin and, later, methyltestosterone.

The Tuberculous Round Focus in Its Chronic Form. H. Lichtenstein and J. Munk. Dis. Chest **26:**306-317 (Sept.) 1954 [Chicago].

In the course of mass radiographic chest examinations of 350,000 new immigrants carried out in reception camps in Israel, in 104 persons the roentgenologic finding of small, dense, well-defined rounded shadows situated predominantly in the upper lung fields was made. The density and well-defined character of these shadows suggested fibrotic lesions. Clinical, roentgenologic, and bacteriological examinations were done over a period varying from several months to two years. The roentgenologic examinations showed that in 70% of the cases there was no change in the size or the shape of the lesion. Systematic clinical investigations did not reveal any pathological signs, and no toxic manifestations were found. The gastric washings of 82 patients were cultured for tubercle bacilli, and in 44 (54%) Mycobacterium tuberculosis was found. The radiological finding of a "round shadow" in the lung has been known to be a manifestation of two pathological processes. One is the early tuberculous infiltration described by Assmann and the other is that of an inspissated cavity, the so-called closed type of cavity closure described by Bobrowitz, Oleneva, and Haefliger. Patients with both these processes usually feel ill and consult the physician because of cough, fever, and general malaise. On the contrary, persons with the round foci observed at mass radiographic examination felt completely well. It follows from the authors' observations that the round foci must differ from Assmann's round lesion as well as from the round focus that developed by cavity closure. The term "tuberculous round focus in its chronic form" is proposed for this type of lesion, which is assumed to be a lesion surrounded by a capsule of connective tissue containing material of differing histological architecture, the enclosed materials being predominantly caseous in most cases. The pathogenesis of the lesion is that of a bronchogenous reinfection. Treatment is chiefly conservative. If active treatment becomes necessary, resection is preferable to collapse. Not only tuberculous lesions, which differ in their pathology, but also lesions caused by other pulmonary diseases of inflammatory, nonspecific character may appear in the roentgenogram as a rounded, homogenous, dense shadow. The differential diagnosis between these and the authors' chronic round foci may be difficult. Sometimes, tomography may reveal a central translucent area within the round foci. Though this may point to a tuberculous lesion, it cannot exclude a tumor. Thoracotomy should be performed in doubtful cases.

Closure of Tuberculous Cavities Under the Influence of Antibiotic Medicaments. E. Bernard, P. Renault, J. Chrétien and others. Rev. tuberc. **18:**508-521 (No. 6) 1954 (In French) [Paris, France].

The clinical and radiological findings in 20 patients with cavitary tuberculosis treated with antibiotics were studied and compared with the anatomic findings in specimens later removed from the same patients or obtained from other patients with similar lesions in an effort to determine the manner in which cavities disappear under the influence of antituberculous drugs. Treatment in 17 cases consisted of streptomycin given at the rate of 1 gm. every three days combined with isoniazid (oral) and *p*-aminosalicylic acid (intravenous) given daily in the usual doses; three patients received isoniazid and *p*-aminosalicylic acid alone. The total duration of the treatment varied, but it was never less than three months; 14 patients were treated for more than six months and in 9 treatment is still under way. Study of the tomographs showed that complete disappearance of the cavities usually occurred between the second and fifth months of treatment. Patience therefore is required, and treatment should not be discontinued prematurely. Involution of the lesions, however, began to be evident as early as the first month in the 19 patients in whom closure was complete. The diminution and ultimate disappearance of the cavity were accompanied in all cases by parallel regression of associated lesions. Cavity regression was comparatively frequent in patients with associated nodular or confluent foci, but in patients with thick-walled cavities it was rarely satisfactory, and the fairly large dimensions of the residual opacity suggested that the cavity had been replaced by a substantial caseous focus. Classification of the residual radiological aspects presents numerous difficulties, but in general three morphological types can be distinguished: (1) trabecular, either linear or stellar; (2) small opacities, either simple or complex; and (3) larger dense foci. The linear trabecular aspects are by far the most frequent. The probable durability of the apparent cures and the structure of the residual foci were investigated in the light of the parallel anatomic findings. The most interesting of these was the discovery of genuine fibrous scars similar to those first described by Laennec but hitherto found only after years instead of months of treatment. Calcareous concretions surrounded by more or less thickened sclerous tissue, seen in some of the specimens, apparently represented the remnants of caseocalcified foci from which the caseous elements had been removed. Small, dense, homogeneous caseous foci, clearly encapsulated, which were found in some cases, were unquestionably the remnants of healed cavities. Larger residual foci, however, regardless of their structure, carry possibilities of reactivation in proportion to their size, and for these surgical treatment may legitimately be considered. Cavities that have undergone retraction may also contain caseous debris of a gritty or crumbly texture without encapsulation. Small cavities only 2 or 3 mm. in diameter that could obviously not be detected by radiological methods were found in some specimens on examination with a loupe. Some of these tiny cavities were appended to bronchi, and their walls were completely cleansed and covered with mucosa; others, in spite of their small size, retained all the characteristics of active tuberculous cavities, but in both cases they seemed to represent a stage of advanced involution far on the way to cicatrization. These various residual lesions do not differ essentially from those described before the era of antituberculous drugs; unlike those of the past, however, which were found only after prolonged rest and collapse therapy,

they usually appear within six months after detection of the cavity and in the course of treatment. The stability of these apparent cures depends on many factors, such as the character of the residual lesion, the local conditions, and the extent of the tuberculous disease apart from cavity formation, but this report shows that in some cases at least genuine anatomic cures may be obtained by the use of antituberculous drugs.

The Isolation of Coxsackie Virus from Cases of Pleurodynia in Canada. G. Dempster and S. C. Mitchell. Canad. J. Pub. Health **45**:345-349 (Aug.) 1954 [Toronto, Canada].

During the summer of 1953 epidemiological studies were carried out on 90 patients with suspected Coxsackie virus infections. Thirty-three of these were diagnosed as nonparalytic poliomyelitis, 16 as herpangina, 6 as epidemic pleurodynia, and 11 as a variety of other conditions; the remainder constituted two separate outbreaks of pyrexial condition of unknown origin. Coxsackie virus was recovered only from the patients with herpangina and the patients with pleurodynia. This paper is concerned chiefly with the cases of pleurodynia. Coxsackie virus of a B type, which was not neutralized by Dalldorf's types B1, 2, 3, or 4 antiserums, was isolated from two of the six patients with sporadic pleurodynia, and specific rises in antibody were found during convalescence. From a third patient Coxsackie virus type A6 was recovered and a serum antibody rise to it was obtained. In the latter patient a high level of antibody to type B4 was noted in both the early and late specimens of blood, although this virus could not be isolated from the stool even in suckling mice protected against the A6 strain. The authors cite published reports that indicate the association of group B Coxsackie virus with outbreaks of epidemic pleurodynia or Bornholm disease. That the disease is not associated with one particular type of Coxsackie B virus is well recognized; the first strain isolated was a type B1, and type B4 was reported as the agent responsible for an outbreak in the summer of 1952 in the Transvaal. For this reason the authors do not consider it surprising that the type B strains recovered by them from two patients with sporadic pleurodynia, during a period when Coxsackie infection was not widespread, did not correspond to one of the recognized types. The primary isolation of a group A Coxsackie virus from one of the patients described and the concurrent rise in antibody to it indicate the difficulties that may arise in the laboratory diagnosis of sporadic infections.

Essential Agammaglobulinemia. C. Moncke. Schweiz. med. Wchnschr. **84**:1033-1035 (Sept. 4) 1954 (In German) [Basel, Switzerland].

The occurrence of complete agammaglobulinemia is reported in a 16-year-old boy with pneumococcus meningitis. The patient's history showed that in the six preceeding years he had furunculosis, temporary pulmonary infiltration, pneumonia, repeated attacks of otitis media, and bronchitis. The patient was given 18,600,000 units of penicillin and 53 gm. of sulfamethazine (Elkosin), and his temperature was restored to normal within seven days. The pneumococcus meningitis was first considered a sequela of bronchopneumonia. The patient recovered and was discharged two months after his admission to the hospital, but a new infiltration of the lungs was revealed by an ambulatory control examination carried out two months later. He was readmitted to the hospital, and paper electrophoretic examination of the patient's serum showed the following composition of serum proteins: proteins 73.93%, alpha$_1$ globulins 5.22%, alpha$_2$ globulins 9.95%, beta globulins 10.9%. There was complete absence of gamma globulins. The total protein content of the serum as determined by refractometry was 6.4 gm. per 100 cc. These findings explained the pronounced weakness of the patient's defense power against the various infections. Close relationship between antibodies and gamma globulins is a well-known fact. Within the two years after the meningitis the patient had repeated pulmonary infiltration, pneumonia, and otitis media. Repeated paper electrophoretic examinations of the patient's serum were carried out within these two years, and they always revealed the absence of gamma globulins and a relatively high portion of alpha$_2$ globulins that did not decrease even after the repeated infections had subsided. After the administration of one ampul of 0.8 gm. of gamma globulins for nine days, the patient did not have any serious symptoms of disease for two months, but repeated electrophoretic examination of the patient's serum did not reveal any significant improvement, and then a new attack of acute otitis media occurred. Continuous therapy with gamma globulins was not possible. Bruton demonstrated that monthly injections of 3.2 gm. of gamma globulin given to an 8-year-old boy with agammaglobulinemia removed the risk of infection as long as the substitution therapy was continued. The deficient defense power of the author's patient was traced back possibly to the third year of life when the patient had pertussis. It seems likely that irreversible damage was inflicted on the formation of the gamma globulins by the disease in childhood. The rapid recovery from a severe pneumococcus meningitis with the aid of antibiotic therapy suggested an otherwise unimpaired cellular defense power. The term essential agammaglobulinemia is suggested since the pathogenesis of the condition has not yet been fully elucidated.

Case of Agammaglobulinemia and the Behavior in the Serum of Parenterally Administered Gamma Globulin Labeled by Radioisotopes. N. Lang, G. Schettler and R. Wildhack. Klin. Wchnschr. **32**:856-863 (Sept. 15) 1954 (In German) [Berlin, Germany].

In a woman, aged 29, who had had repeated infections, particularly of the middle ear and of the repiratory tract since the age of 10, it was impossible for a time to demonstrate gamma globulin. Investigation of antibody formation revealed that it was absent, with the exception of the presence of diphtheria antitoxin and of a temporary increase in titer after the administration of T. A. B. (typhoid, paratyphoid A, and paratyphoid B) vaccine. Since a slight antibody formation (against diphtheria and typhoid) took place despite the absence of gamma globulins, it might be assumed that the antibodies wandered toward other fractions, such as the beta globulins or the alpha globulins, the latter being increased in this patient. It may also be assumed, however, that the electrophoretic method does not detect the proteins that are formed during the increase in antibodies; this will require further immunochemical investigations. The authors believe that the defective serum protein formation was an acquired defect in this woman, since there were no indications that it was congenital or hereditary. After 10 intramuscular injections of gamma globulin in the course of 10 days, the gamma globulins circulating in the serum increased to the extent that was expected, but 8 days after the last injection they were no longer demonstrable by electrophoresis. In order to study the behavior of the exogenous gamma globulins that circulate in the blood, the authors injected labeled gamma globulin intravenously. Their aim was to ascertain whether the development of agammaglobulinemia is caused by lack of new formation or increased decomposition of gamma globulin. The injected human gamma globulin was labeled with radioactive iodine (I^{131}). It was found that decomposition of radioactive gamma globulin took place in a different manner than was assumed hitherto, not only in the presence of agammaglobulinemia but also in the four control subjects. Thus it appears that, as regards half-life values and rates of decomposition, the conclusions drawn from earlier investigations with radioactive blood protein bodies have to be further investigated and revised. It was observed also that agammaglobulinemia is essentially due to a lack of new formation of gamma globulin and not to an increased decomposition or break-down of gamma globulin. The rapidity of decomposition and elimination of the radioactive gamma globulin was not essentially different in the person with agammaglobulinemia than in the control subjects. There was no evidence that certain organs contained larger than ordinary amounts of gamma globulin that had been labeled with radioactive iodine (I^{131}) or of a cleavage product containing I^{131}. In an addendum to this paper the authors say that the woman with agammaglobulinemia was given daily, and later twice a week, injections of Omnadin (a sterile solution containing nonpathogenic bacterial proteins, various animal fats, and lipoids derived from bile). Following this and a climatic rest cure of four months'

duration, there was improvement in the general condition, but shortly after that she had another attack of pneumonia and pleurisy, which responded to treatment with penicillin. After that, fever therapy was given (five attacks), and although the gamma globulin was now demonstrable, the patient had another attack of pneumonia, which quickly responded to treatment and during which the gamma globulin content in the blood was practically normal. Subsequently the gamma globulin values decreased again.

SURGERY

Postoperative Wound Infections Due to Staphylococcus Aureus. C. W. Howe. New England J. Med. **251:**411-417 (Sept. 9) 1954 [Boston].

All surgical wounds are inoculated with bacteria at operation. Whether or not sepsis develops depends on many factors, such as the invasive capacity of the organism, the resistance of the host, the size of the inoculum, the degree of excellence in surgical or antiseptic technique, the presence of physiological derangements, the type of tissue involved, and climatic or seasonal variations in bacterial flora. Recently, a new factor that appears to be related to the use of antibiotics has been introduced, namely, the dissemination of drug-resistant bacteria. This report deals with the incidence of postoperative sepsis in so-called clean wounds and with the micrococcic (staphylococcic) carrier rate in hospital patients and personnel. The data presented were not collected during the course of a planned study, nor were the patients under research control. Statistics were compiled in retrospect by a review of all operations performed during the years 1949 to 1953, inclusive, on the general surgical service. It was observed that the rate of infection of clean wounds after operation at the Massachusetts Memorial Hospitals has gradually increased in a stepwise, statistically significant fashion over the past five years. It is evident that penicillinase-producing coagulase-positive Micrococcus pyogenes var. aureus is the responsible organism in most cases. Analysis of the hospital carrier rate and bacterial flora of infected wounds strongly suggests that this increase in postoperative sepsis is due to an abnormally high penicillin-resistant carrier rate in hospital personnel and patients as a result of the widespread use of penicillin. There is reason to believe that similar situations exist in other institutions. These findings are in keeping with a recognized trend toward increase in the number of penicillin-resistant micrococci being reported and the clinical and therapeutic problems that result from it in the field of medical infections. A program to lower the rate of wound infection has been inaugurated in the Massachusetts Memorial Hospitals. This program consists mainly of measures to prevent cross contamination. Isolation techniques were found to be impractical. Because the nasopharynx is the main carrier site for the Micrococcus, double masking is considered important. Surgeons and nurses are urged to wear masks and gloves for handling all contaminated dressings mainly for self-protection to help prevent the carrier state. Vigilance in aseptic technique in the operating room and on the ward is emphasized. Probably the most important factor in prevention is an awareness on the part of the staff of the nature, magnitude, and epidemiology of the problem.

The Effect of Intrapericardial and Intracardiac Procaine upon the Circulation in Man During Mitral Commissurotomy and Pulmonary Valvulotomy. H. F. Fitzpatrick, E. M. Papper, E. Krahl and others. J. Thoracic Surg. **28:**259-265 (Sept.) 1954 [St. Louis].

One to 10 cc. of a 1 or 2% solution of procaine was injected into the pericardial sac and at the base of the auricular appendage of 11 patients before mitral commissurotomy. There was a significant increase in the heart rate in 8 and a drop in blood pressure in 4 of the 11 patients. All the patients had short bursts of ventricular extrasystoles at the actual moment of finger fracture of the commissures. Twelve patients with comparable types of mitral valvular disease did not receive procaine. There were inconsequential changes in heart rate and blood pressure during the surgical manipulations. There occurred the same bursts of ventricular extrasystoles of about the same duration as were observed in the patients who were given procaine. The same contrast was evident in comparing 20 patients with pulmonary valvulotomy who were given procaine with 7 to whom isotonic sodium chloride solution or no injection was given. Tachycardia occurred in each of the 20 patients, and in 10 it was accompanied by a drop in arterial blood pressure. There was no change in blood pressure or pulse rate in those who did not receive intrapericardial injections of procaine. Again there was no difference in the incidence or severity of the ventricular extrasystoles whether or not procaine was used. The injection of procaine into the pericardium and into the heart muscle thus produced tachycardia in 28 (90%) of the 31 patients to whom the drug was given; in 14 (45%) it also produced hypotension. In the 19 comparable control patients these effects were not observed. The production of tachycardia and hypotension is considered harmful in patients who are to be subjected to operations on the heart and great vessels and particularly harmful in those whose myocardial reserve is already limited; the induction of tachycardia may precipitate so great a fall in cardiac output as to be a serious physiological threat.

Experiences and Results with Mitral Commissurotomy. J. C. Jones, B. W. Meyer and J. Ervin. West. J. Surg. **62:**482-485 (Sept.) 1954 [Portland, Ore.].

Jones and associates performed mitral commissurotomy in 200 patients during the past three years. About one-fourth of these patients were subjected to cardiac catheterization, but this diagnostic study is considered necessary only in unusual cases. In general the authors relied on the cardiologist to select patients for commissurotomy. They have come to recognize certain factors as predisposing to favorable results: 1. Patients between the ages of 25 and 45 seem to stand surgery better and show the most improvement postoperatively. Reactivation of rheumatic fever is apt to occur in patients in the younger age group. 2. Patients who have had one or more periods of failure prior to surgery are not expected to do as well as those having only symptoms of pulmonary hypertension and strain of the right side of the heart. 3. If there is a moderate degree of chamber enlargement of the right ventricle and left auricle, and a normal left ventricle, results may be expected to be good. If there is marked enlargement of the left auricle, with an associated left ventricular enlargement, the results will not be good. 4. The presence of a mitral systolic murmur does not always indicate the degree of insufficiency that will be found at the time of surgery. To determine this point the authors used the delayed angiogram technique as devised by Zinsser. 5. There is no satisfactory way of ascertaining pulmonary vascular sclerosis, but if the chest roentgenogram shows considerable pulmonary fibrosis and hemosiderosis the results will not be dramatic, although they may be good. 6. Providing the mitral stenosis was the predominant lesion, other valvular lesions were not accepted as contraindications to mitral commissurotomy, but the results in this small group of patients have been poor. 7. Conversion to regular rhythm was achieved in few patients who had fibrillation prior to surgery. 8. Although some of the best results were achieved in patients with a history of previous embolic phenomena, the operation involves greater hazards in these patients. The authors emphasize that the mitral leaflets must be of such a character that a competent valve will result after commissurotomy. Mitral insufficiency, if present before surgery, is not improved by commissurotomy. Death attributable to the operation occurred in 14 of the 200 patients. Emboli and cardiac failure were the chief causes of death. Improvement was definite in 134 and probable in 21 patients.

The Billroth 1 Gastric Resection: Experimental Studies and Clinical Observations on 291 Cases. H. N. Harkins, E. J. Schmitz, L. M. Nyhus and others. Ann. Surg. **140:**405-427 (Sept.) 1954 [Philadelphia].

The present evaluation of the Billroth 1 operation is based on experiments performed on 23 dogs and results obtained in 291 patients in whom the procedure was used 266 times for benign gastroduodenal disease and 25 times for carcinoma. The effect on the hormonal phase of gastric secretion—other

than that attributable to the antrum—of performing a gastroduodenostomy as compared with gastrojejunostomy was studied experimentally. Using carefully controlled Heidenhain pouch secretions as an indicator of the hormonal phase of gastric secretion, the authors found a definite stimulatory effect on gastric secretion after gastrojejunostomy as compared with gastroduodenostomy. The comparative ability of the duodenum and jejunum to withstand digestion by gastric acid chyme was also investigated in dogs. Rapid development of jejunal stomal ulceration occurred in 100% of the animals in these experiments with gastrojejunostomy, in contrast to the slower development and much lower incidence of duodenal stomal ulceration after gastroduodenostomy. Of the 266 gastric resections performed in patients with benign disease, 233 were resections of two-thirds to three-fourths of the stomach and 33 were hemigastrectomies combined with vagotomy. In the subtotal resection group 92% of the patients achieved a satisfactory result. Dumping was observed at some time in the postoperative period in 34% of the patients followed. The recurrence rate was 1.3%. Sixty-eight per cent gained or maintained stable weight. No significant difference in results between the two ulcer groups was noted. Mortality rates were 2.6% in the group with benign disease and 24% in the group with carcinoma. Thus, it will be seen that gastroduodenostomy is superior to gastrojejunostomy in that it results in a lower level of gastric secretory activity of the hormonal phase and later and less marginal ulceration. The Billroth 1 gastric resection as performed by the authors in clinical practice permits an adequate and satisfactory resection in the great majority of conditions in which it is indicated and has a high yield of good results.

Antrum Hyperfunction and Gastric Ulcer. L. R. Dragstedt, H. A. Oberhelman Jr., S. O. Evans and S. P. Rigler. Ann. Surg. **140:**396-404 (Sept.) 1954 [Philadelphia].

The concept that gastric ulcer is caused by a hypersecretion of gastric juice owing to antrum hyperfunction is supported by the following clinical and experimental evidence. A hypersecretion of gastric juice with ulcer formation can be produced in dogs by transplanting the antrum into the colon. The chief factors causing a continuous liberation of gastrin from the transplanted antrum appear to be continuous peristaltic activity of the colon in the presence of fecal material plus the absence of the normal acid inhibition of antrum function occurring when the antrum is in its normal location. Prolonged contact of the antrum mucosa with food and excessive peristalsis and distention of the antrum from pyloric stenosis cause hyperfunction of the antrum with hypersecretion and gastric ulcer formation in dogs. These factors are also present in many patients with gastric ulcers. The beneficial effects of partial gastrectomy in patients with gastric ulcers are chiefly due to removal of the antrum and consequent abolition of the humoral or hormonal phase of secretion. This is undoubtedly the explanation for the good results of the Madlener operation for high-lying benign gastric ulcers. Chronic gastric ulcers developed in patients after complete vagotomy for duodenal ulcer and healing of the duodenal ulcer with gastric stasis. Gastric ulcers did not develop in a much larger series of patients treated by vagotomy combined with gastroenterostomy to prevent stasis. In dogs provided with Heidenhain pouches, complete gastric vagotomy produces an increase in the humoral stimulation of gastric secretion when stasis of food in the stomach occurs. This increase is prevented by satisfactory drainage operation. Stomal ulcers rarely occur after antrum resection or gastroenterostomy for gastric ulcers but are common when these operations are done for duodenal ulcers. Duodenal ulcers are due to a hypersecretion of gastric juice of nervous origin, and this is not abolished by gastroenterostomy or antrum resection, operations that reduce or eliminate the hormonal phase of gastric secretion. The fasting nocturnal gastric secretion of patients with gastric ulcer is within the normal range but is greatly increased in patients with duodenal ulcer. The fasting continuous secretion is chiefly of nervous origin. The antrum mechanism is quiescent in the empty stomach. Stigmata of nervous tension are common in patients with duodenal ulcer but not in patients with gastric ulcer.

Surgical Treatment of Obstructive Jaundice. W. Thiele. Beitr. klin. Chir. **189:**28-36 (No. 1) 1954 (In German) [Munich, Germany].

Opinions are still divided as to the method by which surgical intervention in obstructive jaundice should be terminated after choledochotomy. Thiele, assuming an exact indication, considers choledochoduodenostomy to be the method of choice for taking care of the opened congested choledochus with thickened walls, while Kehr's T-drainage should be used as an emergency procedure only. Acute obstruction of the choledochus with stone as well as severe cholangitis with fever, chills, icterus, and severe disturbance of the general condition require early surgical intervention, while in cases of so-called chronic obstructive jaundice surgical intervention may be delayed for two or three weeks, during which conservative therapy may be practiced. Of 1,382 gallbladder operations performed at the surgical department of the City Hospital in Mannheim, Germany, between 1942 and 1952, there were 91 choledochoduodenostomies. Forty-seven of the 91 patients who underwent this type of operation were followed up; good results were observed in 43, fair results in 3, and only one patient was a therapeutic failure. Of the 91 patients subjected to choledochoduodenostomy 7 died, a mortality rate of 7.7%. No deaths occurred among the 61 patients who were operated on since 1950. In view of the efficiency of choledochoduodenostomy, a more frequent application of this operation is advisable.

Common Proctologic Problems. L. A. Buie. J. South Carolina M. A. **50:**260-263 (Sept.) 1954 [Florence, S. C.].

A patient consults his physician for rectal trouble usually when there is pain. Thorough examination is of vital importance. About a fifth of the patients in whom the author discovered cancer had been treated for something else during the period of their early symptoms. The possibility of cancer should be assumed until it has been ruled out. Proctoscopy should be preceded by a digital examination to determine whether there is a painful condition or an obstructive lesion that will interfere with the proctoscopic examination. General anesthesia should not be employed during proctoscopy, because the patient's cooperation is necessary, and perforations have been known to occur when proctoscopy was done under general anesthesia. It is important to anticipate the patient's discomforts and explain them to him before he experiences them. Usually polyps are adenomas and all of them will become malignant if the host lives long enough; hence it is necessary to treat them radically. When thorough fulguration is impossible, a surgical operation should be employed in order to assure complete removal of the growth. Frequently a small polyp is found adjacent to a cancer. In a series of 200 consecutive patients in whom Buie and his colleagues discovered a polyp, they advised that it be destroyed; 4 patients did not follow advice. Within a period of four years, all four patients returned, and in each cancer was found at the site of the polyp. Abscess is the first evidence of the disease that eventuates in a fistula in ano. Often it is difficult to determine the opportune moment to incise the abscess. In general it is best to allow it to become fluctuant and to approach the point of rupture. By waiting, the wall of the abscess may become well outlined, and, when the abscess breaks through the surface of the skin or is incised through a thin partition, the wall of the abscess becomes continuous with the margin of the skin. If the abscess must be incised through several centimeters of normal tissue, the cut surfaces become exposed to the purulent discharges and the patient may become very sick. The abscess should be incised at its most fluctuant point by a cruciform incision. Physicians should impress on patients the fact that incision and drainage of the abscess is not a curative procedure and that a second operation will be required. The operation of fistulectomy consists in converting all of the fistulous "tunnels" to open "ditches." This always involves cutting of a portion or all of the external sphincter, and sometimes the so-called internal sphincter must be incised. The operation is completed by cutting away overhanging edges and excision of those portions of the fistulous tract that are nearest to the point of origin. Wounds should not be packed excessively, and the packing should not be allowed to remain in the wound cavity longer than 72 hours.

Reduction of Intestinal Flora with Special Regard to Preoperative Treatment of Patients with Diseases of Colon or Rectum. V. V. M. Fog. Ugesk. læger **116:**1157-1166 (Aug. 12) 1954 (In Danish) [Copenhagen, Denmark].

Tests of the effect of the various antibiotics in elimination of intestinal flora show bacitracin and neomycin to be a promising combination. They are not resorbed from the intestine. Together they have an antibiotic spectrum that covers all the bacteria that usually appear in the intestine. On treatment with this combination only yeast cells and occasionally some bacteroids remain in the intestine. Fewer infectious complications seemed to occur after interventions on the colon or rectum in patients who were given the preliminary treatment with bacitracin and neomycin. For preoperative reduction of intestinal flora 3 gm. of bacitracin and 3 gm. of neomycin should be given daily for three days. On routine use of the treatment the effect should be controlled by bacteriological examination of the feces.

Capacity of Seriously Wounded Patients to Produce Antibody. W. P. Havens Jr., D. G. Bock and I. Siegel. Am. J. M. Sc. **228:**251-255 (Sept.) 1954 [Philadelphia].

The relationship of nutritional deficiency and hypoproteinemia to the capacity to produce antibody has been a matter of controversy. Both diminished and normal immunologic responses have been found in poorly nourished patients with abnormal serum proteins. When an antigen is used that evokes a highly specific and precisely measurable antibody, it has been clearly shown that many poorly nourished patients with severe hypoalbuminemia with or without hyperglobulinemia can produce large amounts of antibody. During the Korean war, there was opportunity to investigate the metabolism of proteins in certain groups of wounded men. One study was concerned with the antibody production by young men who had severe malnutrition with hypoalbuminemia. The amounts of antitoxin produced by 15 Schick-negative patients with severe wounds and hypoalbuminemia and 11 normal Schick-negative persons following the intramuscular injection of 50 Lf (limit of flocculation) purified diphtheria toxoid were measured by titration in the skin of rabbits. Comparison of the maximum measured amounts of antitoxin found in both groups revealed that the severely wounded patients had, on the average, slightly greater amounts of antibody than the controls. The only significant relationship determined was between the amounts of circulating antitoxin found before the Schick test and the maximum measured absolute increases attained after inoculation of toxoid. This relationship was constant in both groups and was characterized by the fact that, in general, the greater the amount of circulating antitoxin present before inoculation with toxoid, the greater was the amount subsequently produced.

The Healing of the Disrupted and Resutured Wound. E. D. Savlow and J. E. Dunphy. Surgery **36:**362-370 (Sept.) 1954 [St. Louis].

A 4 cm. left rectus laparotomy incision made under sterile conditions in white male rats served as a standard test wound for studying the pattern of healing in a disrupted and resutured wound as compared with that in a primary wound. The wounds were closed with interrupted sutures of no. 32 stainless steel wire. The sutures were removed before determining the tensile strength. The tension on the wound was increased by infusing water into a plastic bag suspended by a heavy silk thread from the edge of the wound. The opposite edge was held stationary. The weight of the bag and the water at the time of wound disruption was taken as the tensile strength. The wounds in 17 of the 50 animals so tested were resutured and tested again three days later. No resutured wound was weaker than it had been as a three-day primary wound, and all were at least three times as strong as on first testing. This phenomenon was particularly pronounced when a fresh wound less than one week old was disrupted but could be observed to continue in decreasing degree for about 40 days. Microscopic sections of a normal three-day wound and of a wound that was disrupted on the third day and then resutured were stained with hematoxylin and eosin, and photomicrographs were taken. The primary three-day wound was filled with fibrin clot, with only slight evidence of fibroplastic activity. In the resutured wound there was complete bridging of the incisional gap by proliferating fibroblasts. The histological appearance of the resutured wound was the same as that of a primary wound six days old, except that the latter was somewhat better organized, with less tissue edema. The possible role of systemic factors derived from the metabolic changes occurring during the pituitary-adrenal stress response was appraised as follows. Two groups of rats were given intramuscular injections of corticotropin or cortisone daily for two to three days in lieu of a primary wound. Three days after the first dose of each drug had been given (at the same time as the first tensile strength was determined in the untreated animals), a standard test wound was made in both groups. Results showed that the rehealing phenomenon is not stimulated by the systemic effects of wounding or by corticoid administration. Administration of cortisone in large doses started before wounding retarded healing and abolished this effect in the three-day resutured wound. However, if started at the time of disruption of the primary wound, cortisone therapy did not inhibit the accelerated healing of the resutured wound. Wide excision of the wound edges at time of disruption greatly altered but did not eliminate the rehealing phenomenon. The healing of the disrupted and resutured wound follows an accelerated pattern. The onset of fibroplasia seems to be earlier without the usual latent period characteristic of the primary wound. It is in the local environment of the healing wound that the factors responsible for this phenomenon must be sought. The nature of these factors remains to be determined.

NEUROLOGY & PSYCHIATRY

Clinical Experiences with Stellate Ganglion Block in Treatment of Cerebral Apoplexy. W. Böhmert. Medizinische **No. 36:**1196-1199 (Sept. 4) 1954 (In German) [Stuttgart, Germany].

Blocking of the stellate ganglion with 2 to 10 cc. of a 1 or 2% solution of procaine hydrochloride was employed in the treatment of cerebral apoplexy in 22 women whose average age was 65.6 years and in 25 men whose average age was 64 years. Forty-four of the 47 patients had arterial hypertension, while 3 patients had hypotension with pressure values between 110/60 mm. Hg and 90/60 mm. Hg. The block was performed first on the side of the focus, and contralateral blocking was done 5 to 12 hours later. Successive blocking was carried out at intervals of about 24 hours, with daily alterations in the side of the site of the injection. The number of blocks depended on the response of the individual patient, but four to five blocks proved sufficient in most. Five patients required only a single block. Treatment with stellate ganglion block was started within one hour after the cerebrovascular accident in one, within one to 5 hours in 5, within 5 to 12 hours in 6, and within more than 12 hours after the cerebrovascular accident in 35. "Lightning-like" improvement, with disappearance of the neurological symptoms, resulted within 15 minutes in 29 patients. In 19 of these 29 patients the motor and sensory disturbance subsided almost completely, while in 10 pareses and sensory disturbances subsided only partially. Improvement occurred slowly in seven patients. Eleven patients were therapeutic failures, and nine of these died; autopsy, which was performed in six cases, revealed white foci of softening twice the size of a fist. Only 5 of the total number of 200 stellate blocks performed in the 47 patients caused temporary hoarseness or aphonia. Urticarious edema of the homolateral half of the face occurred once in one patient but subsided within a few hours. No other undesirable side-effects were observed. Treatment with aminophylline (Euphyllin) preceded the stellate block in 23 of the 47 patients, but in none of these patients was aminophylline given as early as required, i. e., within one hour after the cerebrospinal accident, and consequently rapid improvement could not be obtained by this method. Rapid, striking improvement, however, was obtained with stellate block in nearly half of the patients pretreated with aminophylline. Results obtained by the author with early procaine blocking of the stellate ganglion at the contralateral side of the neurological symptoms, i. e., at the side of the lesion, and occasionally also on the other side, demonstrate that the severity of the cerebrovascular damage may be decisively in-

fluenced in patients with cerebral apoplexy. Cerebral angiospastic conditions and stasis with their disastrous consequences may be effectively prevented. In the presence of organic damage, functional accompanying symptoms always will be influenced favorably. Considerable therapeutic success may be obtained with stellate block even in cases in which some time has elapsed since the occurrence of the cerebrovascular accident, although prognosis becomes less favorable with increasing time interval. It is, therefore, suggested that stellate block should be given a therapeutic trial in all patients with apoplectic attacks except those with massive hemorrhage. With a good command of the technique and appropriate caution, stellate block is not associated with any essential risk.

The Electroencephalogram in Essential Hypertension and Chronic Cerebrovascular Disease. J. A. Roberts and M. Walker. Electroencephalog. & Clin. Neurophysiol. **6**:461-472 (Aug.) 1954 [Montreal, Canada].

Roberts and Walker present the results of an analysis of 104 patients with essential hypertension and cerebral arteriosclerosis that was undertaken primarily to correlate the electroencephalographic findings with epilepsy in this disease. The electroencephalographic records were taken on the usual 6 or 8 channel electroencephalographs. There were three groups of patients: 27 with essential hypertension, 69 with hypertension and neurological signs and symptoms, and 8 with neurological signs and symptoms but without hypertension. None of the 27 hypertensive patients of the first group had clinical evidence of cerebrovascular disease, although in nine instances there was some degree of peripheral or retinal arteriosclerosis. Fourteen, or 51.8%, had abnormal electroencephalograms. The group of 69 patients with hypertension and neurological signs included 45 with neurological symptoms other than epilepsy; and 37, or over 80%, of these patients had abnormal electroencephalograms. Of the 24 patients with epilepsy all had abnormal encephalograms. In 20 the epilepsy was the only symptom of importance. The remaining four had, in addition to the epilepsy, moderate or severe mental deterioration. The epilepsy in 12 cases consisted of grand mal attacks that were relatively frequent. Seven patients had brief akinetic attacks only. In these, generally when walking, the patient without warning suddenly falls to the ground or onto the knees. He does not remember falling, and the loss of consciousness is brief. Recovery is immediate, the patient rising quickly and continuing as before unless hurt by the fall. Cerebral arteriosclerosis without hypertension is rarely seen in neurological clinics. In the eight patients of this group seen by the authors the diagnosis of cerebral arteriosclerosis was made on the basis of focal cerebral thrombosis or a history of progressive dementia or epilepsy for which no other cause could be demonstrated. In every case the electroencephalogram was abnormal, and, on the whole, slow activity was the most prominent feature. In the four patients without epilepsy the electroencephalographic abnormalities were not severe. The authors feel that this analysis emphasizes the importance of epilepsy as a symptom in cerebrovascular disease. Throughout the whole series the electroencephalographic abnormality varied widely in type and severity and was in no way specific for any subgroup. Paroxysmal activity was occasionally present in both epileptic and nonepileptic patients. In the epileptic group grand mal and akinetic attacks were the commonest.

The Nature of Bell's Palsy. R. Wyburn-Mason. Brit. M. J. **2**:679-681 (Sept. 18) 1954 [London, England].

The great auricular nerve is purely sensory, and some of its fibers join the facial nerve and with it pass to all parts of the face. Irritation of or injury to this nerve or the cervical nerve roots or segments from which its fibers originate may lead to facial palsy of the lower motor neuron type possessing features identical with those of Bell's palsy, even though the facial nerve is not directly affected. Thus herpes zoster of C-2 and C-3 zonal areas and the trigeminal area and the so-called otic zoster may be complicated by facial weakness (transient or permanent) similar to that found in Bell's palsy. Facial weakness and spasm may also be seen after irritation of the great auricular nerve by trauma, x-irradiation, and alcohol; cases, however, in which palsy results from intracranial lesions, disease or fracture of the petrous bone, or middle-ear disease are not included in this study. Patients with typical Bell's palsy of the rheumatic type often have a history of exposure of the side of the neck to drafts or dampness. Pain, tingling, or neuralgia in the retroparotid region, over the side of the head and neck, in front of or behind the ear, in the auditory canal, and perhaps on the cheek or around the eye often precede the onset of palsy by some days. All of the regions thus affected are supplied by the fibers of the great auricular nerve and are those to which pain radiates when the nerve is injected with alcohol. Acute tenderness on pressure has also been noted over the course of the great auricular nerve as it lies on the sternomastoid muscle in patients with rheumatic Bell's palsy. The appearance of symptoms before the onset of the palsy suggests that the primary lesion is a neuritis of the great auricular nerve, set up in some cases by exposure of the side of the neck to cold or dampness and later extended to the facial nerve. Infiltration of the great auricular nerve with 2% cocaine in 20 successive patients with Bell's palsy with pain and paresthesia of the kind described was followed by immediate and complete relief of the pain and the disappearance of the swollen, numb, or tight feeling in the face and head lasting as long as the action of the anesthetic; and, even after its effect had worn off, the pain and paresthesia continued to be greatly diminished or were almost nonexistent.

Classification, Natural History and Treatment of Myopathies. J. N. Walton and F. J. Nattrass. Brain **77**:169-230 (June) 1954 [London, England].

Walton and Nattrass propose a classification of the myopathies that they base upon a review of the clinical features and natural history of the disease in 105 cases of myopathy of various types. The results of a controlled trial of several forms of treatment in these cases is also described. In an attempt to enumerate all the forms of myopathy previously described, the authors compiled a list of 18 different types, but they feel that this classification is much too unwieldy for routine use. It includes many conditions that are extremely rare, and it is quite possible that the distinctions between other groups are artificial. On the basis of an analysis of clinical and genetic data the authors conclude that the commonly occurring cases of muscular dystrophy should be classified into three broad groups, the Duchenne, facioscapulohumeral, and limb-girdle types. In addition to these three principal divisions, other uncommon forms of myopathy occur that are clinically and genetically distinctive and include the distal, ocular, congenital, and local forms, as well as certain myopathies of endocrine and metabolic origin and others that appear to be related in some way to the collagen-vascular diseases (the menopausal and benign childhood types). Observations on myotonic cases with and without dystrophic features convinced the authors that, despite differences in clinical aspects and course, they represent a single disease process, which should be termed "the myotonic syndrome," while its component entities should be referred to as the dystrophia myotonica, myotonia congenita, and paramyotonia forms. With this classification, the series of cases reviewed by the authors consists of 48 Duchenne-type cases, 15 scapulohumeral, 18 limb-girdle, 2 distal, and 1 ocular case, and 21 cases of the myotonic syndrome, 15 of the dystrophia myotonica, and 6 of the myotonia congenita forms. The characteristics of the different forms are listed with regard to such factors as sex distribution, age of onset, mode of progression, hereditary transmission, involvement of types of muscles, length of survival, and degree of disability. The results of therapeutic trials in 98 cases are also reported. The patients were divided into five groups, selection being made at random save for the fact that each group contained comparable numbers of patients with the various forms of myopathy. A different form of treatment was used in each group of cases, and every patient was treated for six months. The remedies used were synthetic alpha-tocopherol, wheat-germ oil, mixed natural tocopherols, nicotinamide, and a control substance. Clinical testing of muscular power and certain test movements were carried out in all cases before treatment was

begun and were repeated at the end of the course. No patient showed objective improvement, and, while a number of patients in each group showed slight subjective improvement, statistical evaluation gave no evidence that any of the remedies had any significant effect on the course of the disease. It is concluded that vitamin E therapy is of no value in the treatment of typical cases of myopathy; patients should be encouraged to move about and to take moderate exercise, while frequent active and passive movements of the limb joints should be carried out in order to prevent contractures.

Sensory Precipitation of Seizures. R. G. Bickford. J. Michigan M. Soc. **53**:1018-1020 (Sept.) 1954 [St. Paul].

Bickford emphasizes the importance of the study of factors that precipitate epileptic seizures. From the research point of view, patients with seizures whose precipitants can be recognized provide valuable material, since in many instances their seizures can be reproduced under conditions of optimum observation, and in this way details of the mechanism are likely to be clearly revealed. From the clinical standpoint the information gained may be of value in the treatment of the patient. The commonest sensory mechanism involved in the precipitation of seizures is the optic system. A search for light sensitivity among an unselected group of epileptic patients will probably reveal its presence in some 3 to 5% of all patients. Typical complaints of such patients are: "Car headlights give me a spell"; "I get a lot of spells on bright sunny days or when there is snow on the ground." In most instances, the type of attack induced is petit mal, but there may be a myoclonic component as in the case of a schoolgirl who dropped her books on the front doorstep every morning. In this instance, the change in illumination associated with opening of the front door resulted in a myoclonic jerk of the arms, and this mechanism was revealed in laboratory testing. Another frequent story is that of jerking associated with driving in an automobile through an avenue of trees when the sun is low. The electroencephalogram of these patients usually shows a diffuse spike and wave type of discharge that may only be revealed under conditions of light stimulation, such as that produced by a flashing Strobatron light. Some of the light-sensitive epileptics have their attacks only in relation to light stimulation, and in these instances the attacks can be prevented by appropriate protective measures. In some instances it is only the red component of light that is involved in the convulsive effect, and excellent results may be obtained by prescribing glasses that exclude the red end of the spectrum. In rare instances visually induced seizures require a more highly organized stimulus. In this connection the author mentions the case of a boy who had staring attacks associated with turning of his eyes and inability to respond to questions when he saw large plaid squares. Then there are patients in whom prolonged reading will elicit attacks, which usually consist of generalized convulsions preceded by an aura of "clicking" or movement in the jaw. If the patient stops reading when the clicking is first felt, the attack usually passes off without leading to a generalized convulsion. The author further discusses seizures that may be induced by a sound stimulus and recommends that clinicians should be constantly on the alert for precipitating factors in their patients' seizures. In many instances, these will not be discovered unless specific questions are asked covering the various categories of precipitation.

Photogenic Epilepsy: Self-Precipitated Attacks. E. G. Robertson. Brain **77**:232-251 (June) 1954 [London, England].

Photic excitation has been subjected to intense study in electroencephalographic laboratories. Since flicker may precipitate diagnostic dysrhythmias in epileptic subjects it is now widely used as a means of "activation" during electroencephalographic recording. Yet clinical descriptions of photogenic epilepsy are few, and self-precipitation of epilepsy has been given little notice. Robertson presents detailed histories of seven patients with photic epilepsy. The common feature was the precipitation of attacks by rhythmical interruption of sunlight falling on the patient's eyes. The flicker may be produced by movement of the fingers or the hand in front of the eyes or by blinking. The attacks were usually slight and of brief duration, with varying degrees of impairment of consciousness. If flicker was repeated for a lengthy period, jactitation and major attacks might occur. In some of the patients major attacks occurred independently, but these were few. Electroencephalograms of self-induced attacks showed varying forms of spike and slow wave discharges of high voltage, usually irregular and usually of brief duration. Encouragement of voluntary inhibition of the provoking movement proved to be the best method of treatment.

GYNECOLOGY & OBSTETRICS

Diencephalohypophyseal Correlations and Their Importance in Gynecology. E. Gyarmati. Minerva ginec. **6**:557-561 (Aug. 15) 1954 (In Italian) [Turin, Italy].

Recent experimental and clinical studies have revealed that from the gynecological standpoint the hypothalamus occupies a key position in the central nervous system. They have indicated that the hypophysis and hence all the functions of the sexual organs undergo the influence of the environment, the psychic state of a person, and the varying functional conditions of the other organs and systems of the body through the hypothalamus. During the war it was observed that trauma to the cranium caused a loss of libido, impotence, and sometimes even testicular atrophy. Ovarian dysfunction after lesions to the head was observed in many instances. There is no longer any doubt that impulses originating from the cerebral cortex can markedly disturb the physiology of the centers of the hypothalamus and hence of the hypophysis and the sexual function. All disturbances of the menstrual cycle can have a diencephalic origin, but secondary amenorrhea is the commonest and most typical psychogenic ovarian dysfunction. Gyarmati reports his experience in a Russian concentration camp for women from 1945 to 1950. Of 1,300 women who were interned, 605 (47%) had amenorrhea. This appeared within six weeks from the day of their arrest, suggesting that not the poor diet, work, and hardships of the camp life but the severe nervous shock caused by the sudden arrest and concentration had had such a rapid repercussion on the menstrual cycle. The onset of menstruation recurred in 61% of the women during the fourth semester of their internment, namely, after life in the camp had improved from the physical and moral standpoints. The author ascribes the occurrence of amenorrhea in only about half of the interned women to the varying reaction of each of them to the emotional trauma. In fact, while some found life in the camp intolerable, others found it bearable, and some even interesting. The diagnosis of certain anomalies in the menstrual cycle originating from the diencephalon must be based on an accurate study of the patient's history and on scrupulous and objective psychic and somatic examinations. The treatment of these dysfunctions is difficult and requires great patience. The possible diencephalic origin of anomalies of the menstrual cycle should always be kept in mind, because the administration of large doses of female hormones to such patients may cause more harm than good by inducing a further inhibition of the diencephalohypophyseal system.

Apocrine-Gland Adenocarcinoma and Extramammary Paget's Disease of the Vulva: Review of the Literature and Report of a Case. A. Plachta and F. D. Speer. Cancer **7**:910-919 (Sept.) 1954 [Philadelphia].

A case of extramammary Paget's disease of the vulva occurring in an obese white woman 64 years old and originating in an apocrine gland adenocarcinoma is presented, with complete autopsy data. The literature on extramammary Paget's disease is reviewed, and the numerous uncertainties in diagnosis and in the nature and histogenesis of the condition are emphasized. The importance of this report devolves on the serial sections of the vulva and their detailed study with microphotographs that clearly show a mucogenic apocrine gland adenocarcinoma with Paget's cells in the ducts of these glands and in the overlying epidermis. Such findings prove as much as any microscopic study can that epidermal extramammary Paget's disease is related to apocrine gland adenocarcinoma. Thus the detailed analogy between Paget's disease of the nipple as described by Cheatle and Cutler and extramammary Paget's disease as

described by Weiner is established. This lesion may be difficult to diagnose without large and possibly multiple biopsies; its evolution is prolonged, but it is an extremely dangerous lesion, since generalized metastases seem to be the rule. This case report offers no solution to the problem of extramammary Paget's disease unassociated with any epidermal adnexal carcinoma. Whether such lesions exist and whether they should be referred to as extramammary Paget's disease must be left for future studies.

PEDIATRICS

A Fatal Case of Poliomyelitis in a Newborn Infant Delivered by Cesarean Section Following Maternal Death Due to Poliomyelitis. C. L. Swartz and E. F. Kercher. Pediatrics **14:**235-237 (Sept.) 1954 [Springfield, Ill.].

A living male infant was delivered by cesarean section within five minutes after maternal death from undiagnosed poliomyelitis. Gestation had lasted 34 weeks, and the mother's fulminating illness had had its onset 24 hours prior to admission to hospital. The baby first showed signs of poliomyelitis at the age of 10 days; he died at 12 days. Type 1 (Brunhilde) strain of poliomyelitis virus was isolated from both the infant's and mother's spinal cord with the tissue culture technique. The disease processes seen at autopsy in the baby seemed to be of longer duration than those found in examination of the mother's tissues. Although positive proof is not forthcoming, this case and four cases in the literature, in which poliomyelitis developed after delivery by section, point strongly to the occurrence of transplacental passage of the poliomyelitis virus. In the instances of delivery by section at the time of maternal death this may be an agonal phenomenon.

Acute Hypervitaminosis A. C. Hooft. Maandschr. kindergeneesk. **22:**271-279 (Aug.) 1954 (In Dutch) [Leiden, Netherlands].

Hooft presents the histories of four infants, ranging in age from 4 to 5½ months, in whom protrusion of the fontanelle was observed after the administration of large doses of vitamin A, usually in combination with vitamin D. Three of the children received 100,000 units of vitamin A, and one received 200,000 units of vitamin A. The doses of vitamin D ranged from 100,000 to 600,000 units. In three of the children the vitamin content of the blood was ascertained. It was normal in two and elevated in one of the children. In this last case the blood was examined 24 hours after the administration of vitamin, in the other two 48 hours later. The first report about the protrusion of the fontanelle after the administration of vitamin A appeared in 1951. In that report it was demonstrated that vitamin A rather than vitamin D was responsible. Other manifestations of increased intracranial pressure may be present, but they are not as constant as the protrusion of the fontanelle, which French authors have referred to as "bombement en chapeau de clown." Hooft believes that the temporary hypervitaminemia, the age of the patient, the nature of the preparation used, the absorption in the gastrointestinal tract, and the reactivity of the liver and the reticuloendothelial system are important factors in the causation of acute hypervitaminosis A.

Functional Results of Lung Resection in Children. P. Santy and M. Bérard. Pédiatrie **9:**571-582 (No. 6) 1954 (In French) [Lyon, France].

The personal experience of the authors includes 123 lung resections—20 pneumonectomies, 95 lobectomies, and 8 segmental resections. Some of the patients have been followed for as long as 18 years. The patients operated on were children 2 months to 15 years old. Since the year 1948, the risk of these operations has been much diminished by technical advances and the use of antibiotics; only three deaths occurred among the 94 patients operated on after that time, as compared with seven among the other 29. There were no long-term deaths attributable to surgical intervention. In general, the functional future of these patients is good; it depends essentially on the type of operation undergone, partial resection being less serious than pneumonectomy, and on the patient's postoperative course. After a partial resection, even a bilateral one, the patient's functional adaptation is excellent; often his respiratory function is improved. The problems relating to functional recovery after pneumonectomy center about the empty hemithorax and the derangements in growth caused by it; however, pneumonectomy is justifiable in the pediatric patient and has no untoward effect on his development. Adaptation occurs more rapidly than in the adult patient. The treatment of the thoracic cavity is exactly opposite to what it is in the adult patient; in the latter the mediastinum should be blocked in order to prevent distention of the remaining lung, and thoracoplasty should be performed. It appears that in the child expansion of the healthy lung into the empty hemithorax should be encouraged. Pneumonectomy can and should be performed in children whenever the severity of their lesions warrants total ablation.

Tetracycline: Studies on Absorption, Distribution, Excretion, and Clinical Trial in Children. S. Schwarzer, R. Reeves, A. Claps and A. F. Anderson. J. Pediat. **45:**285-292 (Sept.) 1954 [St. Louis].

The chemical moiety designated as tetracycline is common to the broad spectrum antibiotics oxytetracycline and chlortetracycline. It may be prepared by catalytic dechlorination of chlortetracycline (Aureomycin) or by fermentation. The sensitivity of bacteria to tetracycline is similar to that to oxytetracycline and chlortetracycline. Schwarzer and associates studied the effects of tetracycline in 44 infants and children, ranging in age from one month to 13 years. These children were convalescing from various diseases, but all of them were free from evidence of impairment of renal or cardiac function. The study was undertaken to ascertain: (1) the rapidity of absorption from the gastrointestinal tract, (2) duration of serum levels after single and multiple oral doses in various age groups placed on different dosage schedules, (3) diffusibility into the cerebrospinal fluid, (4) urinary excretion, (5) tolerance, (6) therapeutic effect, and (7) a rational dosage schedule for children. The drug was administered orally in the form of chocolate suspension in a concentration of 50 mg. per cubic centimeter. It was found that tetracycline is absorbed rapidly into the blood stream after oral administration. Antibiotic activity was detected one-half hour after doses of 25 and 50 mg. per kilogram of body weight. Therapeutic serum levels of eight hours' duration were produced with a single dose of 6 mg. per kilogram of body weight. Further increase of dosage produced a proportional increase of serum concentration. A marked cumulative effect was obtained by the second day of therapy, when the dose of 3 and 6 mg. per kilogram of body weight was given at six-hour intervals, thereby providing more effective blood levels. Tetracycline diffuses poorly into the cerebrospinal fluid in patients without meningeal inflammation. The spinal fluid level ranged from one-eighth to one-thirtieth of the simultaneously obtained serum levels. Tetracycline is excreted in high concentrations up to 1,000 μg per milliliter in the urine. The total excretion over a 24 hour period was 26.5 of the given dose. Patients show a high tolerance to the drug. A remarkable lack of side-reactions was observed even with a dose of 150 mg. per kilogram of body weight per day. Of 51 patients treated with the oral suspension, 84.5% were cured, 7.8% improved, and 1.9% unimproved. There were three (5.8%) recrudescences. The studies indicate that the effective oral dose of tetracycline is 25 mg. per kilogram of body weight per day given at six to eight-hour intervals.

Diagnostic Transabdominal Pneumoperitoneum in Children. R. H. Kunstadter and A. Tulsky. Am. J. Obst. & Gynec. **68:**819-829 (Sept.) 1954 [St. Louis].

Transabdominal pneumoperitoneum consists of introducing a measured amount of carbon dioxide or oxygen into the peritoneal cavity and visualizing roentgenographically the outline of the pelvic viscera. This method was used in several normal female children of various ages so that for comparative purposes pelvic abnormalities could be demonstrated radiographically with fewer errors in interpretation. Transabdominal pneumoperitoneum then was performed on 21 patients between the ages of 11 weeks and 19 years with various sex-endocrine

disturbances. Of the 21 patients, 8 had ovarian agenesis, 1 primary hypopituitarism, 2 hypo-ovarianism, 1 cystic ovary, 3 constitutional sexual precocity, 5 pseudohermaphroditism, and 1 polycystic ovaries. The cases of seven of these patients are reported in detail. In some sex-endocrine disturbances, detailed physical examination as well as available laboratory studies may be diagnostically inconclusive. The authors' results obtained with transabdominal pneumoperitoneum in cases of such type showed that this method may aid in establishing the clinical diagnosis and thus avoid a laparotomy. Transabdominal pneumoperitoneum is of special value in the study of children with sex-endocrine disturbances because of the difficulty of adequate pelvic examination. Early diagnosis is desirable in order to plan future medical and/or surgical management.

Galactosemia. P. J. N. Cox and R. J. P. Pugh. Brit. M. J. **2:**613-618 (Sept. 11) 1954 [London, England].

Children with galactosemia are unable from birth to metabolize galactose normally. Galactose, derived from lactose in milk, accumulates in the blood and gives rise to enlargement of the liver, often jaundice, and, commonly, death in early infancy. Cataracts develop in the survivors, and they are mentally deficient. Twenty-five proved cases have been found in the literature up to the end of 1952, and there are others in which the diagnosis is likely. This paper reports a further six cases from three affected families. Of the three children with galactosemia in the first family, the first one died at the age of 2 months, the second one died at 39 days, and the third one survived, but at 18 months the developmental age was less than 6 months. At this time a "lactose-free" diet was started, and during the next year the boy made rapid progress in intelligence and physical development; between the ages of 18 and 30 months his weight doubled. The other three children with galactosemia, belonging to two different families, all died. The infant is normal at birth but does not thrive. Wasting and mild dehydration are usual, but there may be edema and ascites. Enlargement of the liver is the most constant sign. Galactosemia will be recognized if the urine of all sick infants is tested with Benedict's reagents. It should be suspected particularly in the presence of jaundice, hepatic enlargement, or a suggestive family history. The condition should also be suspected in older children in whom mental defect is associated with cataract or liver disease. Without treatment, survival is unlikely, and mental defect is probably the rule. Patients with galactosemia who die early in infancy usually show edema of the brain, kidneys, and other viscera, but the most important change is in the liver. The livers of those who survived less than two months showed varying degrees of parenchymal necrosis and fatty change, with disorganization of the liver pattern and abnormal arrangement of surviving cells. The livers of older children showed only diffuse fibrosis and mild fatty infiltration. Considerable liver damage seems to occur at an early age, probably during the first week of life; the severity of this damage may determine whether or not the child survives.

OTOLARYNGOLOGY

Long Term Results with the Fenestration Operation. E. H. Campbell. A. M. A. Arch. Otolaryng. **60:**265-276 (Sept.) 1954 [Chicago].

Campbell reports on the results of the fenestration operation in 200 patients who were followed through audiograms for five years or more after the operation. The patients were separated in three groups: (1) a group of 130 patients in whom the operation was successful, that is, those who obtained improvement to the practical hearing level for the three speech frequencies; (2) a group of 49 patients in whom the operation was not successful, inasmuch as the hearing either was not improved to the practical hearing level or was satisfactorily improved for a while with later partial loss of the improvement; and (3) a group of 21 patients in whom the hearing was improved to a practical level, with subsequent loss of the hearing to the preoperative level or below. All these 21 patients had revisions, which were eventually successful in 9 (45%). In the 130 successful cases, the average decibel loss before the operation was 49.2 for the three speech frequencies; the average decibel loss one year after the operation was 27.1; the average loss two years after operation was 28.9 db.; and the average loss five years after operation was 27.6 db. The average hearing for the three speech frequencies thus was only 0.5 db. worse at the end of five years than it was at the end of the first year. Forty-three of the 130 patients returned for audiograms seven years or more after the operation; the average decibel loss of these patients before the operation was 48.6, the average loss one year after operation was 24.5 db., the loss five years after operation was 26.5 db., and the loss seven years or more after operation was 28.2 db. In the 49 patients who were operated on unsuccessfully, the average decibel loss before operation was 50.6. The average loss one year after operation was 42.8 db.; two years after operation, 46.4 db.; five years after operation, 49.2 db. Thus an average loss of 6.4 db. occurred in the unsuccessful cases between the end of the first and the end of the fifth year. In the 21 patients who had successful results for a few postoperative months and then lost the improved hearing and had the fenestra revised, the average decibel loss before operation was 45.8. The average loss just before revision was 50 db. Six of the 21 revisions were successful. Of the 15 patients in whom the first revision was not successful, 6 had a second revision, which was successful in 3. These results indicate that those patients who have retained a satisfactory improvement of hearing for one year after operation will retain the improved hearing without further significant loss for at least five years. In the unsuccessful cases, however, a further loss of hearing during the years subsequent to the operation can be anticipated. Certain factors concerned with the postoperative hearing, which may have no connection with the original condition or the operative technique but may intervene to impair the hearing, are discussed, such as psychological reactions of the patient, inflammatory or allergic conditions of the nose and ears, secretory otitis, presence of tinnitus, emotional or nervous disorders, intralabyrinthine hypertension, auditory nerve degeneration, and further advancement of the otosclerotic process. Without a detailed analysis of these various factors that may reduce the hearing in patients operated on, the thought is apt to develop in both lay and professional circles that the long-term hearing results in patients subjected to fenestration are not good. With proper consideration of the influence of such factors, however, there remains the impression that patients with otosclerosis can derive great benefits from the fenestration operation.

Pharyngectomy for Post-Cricoid Carcinoma: One Stage Operation with Reconstruction of the Pharynx Using the Larynx as an Autograft. N. Asherson. J. Laryng. & Otol. **68:**550-559 (Aug.) 1954 [London, England].

Asherson presents the history of a patient in whom pharyngectomy was done for hypopharyngeal carcinoma. Primary reconstruction of the pharynx was undertaken in a one stage operation, making use of the mucous lining of the larynx and trachea. A diagram of the completed operation demonstrates that the hypopharynx has been excised, the oropharynx has been sutured to the glottic aperture, and the subglottic trachea has been sutured to the esophagus. This method is suggested as a possibility in a suitable case, not as a panacea for all postcricoid or hypopharyngeal carcinomas. This operation proves that such an autograft of the mucous lining of the larynx and cartilaginous trachea to pharynx and esophagus, respectively, can be successfully achieved. This one stage operation shortens the postoperative period and avoids the disability of a pharyngeal stoma.

Harmful Sequelae of Adenoidectomy in Children with Chronic Sinusitis. E. E. Brown. Arch. Pediat. **71:**233-243 (Aug.) 1954 [New York].

Brown summarizes the ill-effects of adenoidectomy in the presence of chronic sinusitis on the basis of his own observations on thousands of children in a large hospital and in 10 years of private practice and on the basis of reports in the literature. He feels that adenoids should seldom be removed. Occlusion of the nasopharynx constitutes the main indication for adenoidectomy, and such occlusion is uncommon. Many cases of mouth-

breathing are wrongly ascribed to the effects of adenoids and clear up when the nose is treated. Neither adenoids nor tonsils produce mucopurulent postnasal discharge, which, when chronic, has its source in infected sinuses. Adenoids act as a barrier against complications in the lower respiratory tract. Removal of adenoids increases the likelihood of laryngitis, bronchitis, bronchiectasis, bacterial asthma, and pneumonia, all dependent mainly on an associated (complicating) chronic sinusitis. Deafness, recurring otitis media, and mastoiditis are rarely improved by adenoidectomy, in fact there is evidence that it may aggravate these conditions, since they are dependent largely on sinusitis. Treatment of sinusitis, on the other hand, is imperative.

THERAPEUTICS

Tetracycline Therapy: Clinical and Laboratory Observations on 184 Patients Treated with Tetracycline. W. S. Wood, G. P. Kipnis, H. W. Spies and others. A. M. A. Arch. Int. Med. **94:**351-363 (Sept.) 1954 [Chicago].

Tetracycline is a recently developed antibiotic that has a structure and antimicrobial spectrum similar to those of chlortetracycline and oxytetracycline. To evaluate its clinical usefulness and pharmacological properties, Wood and co-workers studied the effect of oral and intravenous administration of tetracycline hydrochloride in 184 patients with acute infections. All adults were given a dose of 2 gm. a day, and children were given 50 mg. per kilogram of body weight a day in four divided doses at six-hour intervals. The adult patients treated orally were given an initial dose of 1 gm., and the children were given a dose of 25 mg. per kilogram of body weight for the purpose of obtaining a higher initial serum level. The clinical course in 153 of the 184 patients was evaluated on the basis of duration of fever, leukocytosis, subjective complaints, and objective physical findings. The response of the remaining 31 patients could not be properly rated, because a diagnosis of bacterial infection was not substantiated. Tetracycline was found to be clinically as effective as oxytetracycline and chlortetracycline. The results were satisfactory in 40 patients with acute streptococcic infections, 24 patients with pertussis, and 25 patients with pneumonia. Among 16 patients with acute purulent meningitis, the clinical response was similar to that expected under established therapeutic regimens. Four patients with Shigella dysentery and one patient with acute brucellosis, one with acute pyelonephritis caused by a paracolon bacillus, and one with empyema caused by Bacteroides were successfully treated. Unsatisfactory responses were observed in eight patients, in three of whom the primary disease was caused by an antibiotic-resistant Micrococcus (Staphylococcus). Of the remaining five cases, two may be regarded as bacteriological failures. Adverse gastrointestinal symptoms resulting from tetracycline were slight. Diarrhea was attributed to the drug in five instances, and emesia occurred in an equal number of patients. The serum concentrations of tetracycline were determined 6 to 48 hours after administration of the drug. With the aforementioned schedule of dosage, the serum concentrations ranged from 0.63 to 2.5 mcg. per milliliter in 75% of 106 specimens. The concentrations following intravenous doses of the same amount, except that no larger initial doses were given, ranged from 2.5 to 40 mcg. per milliliter. The antibacterial spectrum of tetracycline, as determined clinically, was found to be similar to that of chlortetracycline and oxytetracycline. Also, the in vitro inhibition of 32 strains of Micrococcus pyogenes var. aureus by tetracycline paralleled that of chlortetracycline. There was a tendency for staphylococci, coliform bacilli, Pseudomonas aeruginosa, and Proteus species to persist or appear after the initiation of tetracycline therapy.

Roentgenologic Changes of the Lung Associated with Isoniazid Therapy in Pulmonary Tuberculosis. D. Salkin and J. A. Schwartz. Dis. Chest **26:**255-263 (Sept.) 1954 [Chicago].

One hundred six patients with pulmonary tuberculosis were treated with isoniazid as the only chemotherapeutic agent used for a period of from 3 to 15 months. Seventy-three patients were given 150 mg. of the drug daily, 19 received 300 mg. daily, and a variable dose from 225 to 400 mg. was given to 14. The authors studied the effect of the drug on the various types of lesions as it was revealed by changes in the roentgen shadows of these patients. There were 135 areas of active infiltration, which were classified according to their pathological characteristics in four groups, exudative, exudative-productive, productive, and productive-fibroid lesions. Roentgenologic improvement was observed in 65, 37, 14, and 4%, respectively. The greatest improvement occurred in the more recent exudative lesions, in those of minimal or moderate extent, and in the patients infected with tubercle bacilli sensitive to streptomycin. Conversely, the poorest results were obtained in patients with the older productive and fibroid lesions, in those with far-advanced cases, and in the patients infected with tubercle bacilli resistant to streptomycin. Initial changes in the roentgenograms occurred within three months; improvement continued rapidly up to about five months and thereafter was at a slower but still steady rate. Such inactive infiltrations as true fibrosis and calcification were not altered in any way. There were 81 patients with 107 distinct cavities that were classified similarly to the infiltrations. Some reduction in size occurred in 25 cavities (23%), including five closures. The productive cavities showed some decrease in size in 45%, the fibroid in 7%, and the others averaged 22%. Apart from the five closures, the average decrease in size was 35%, and most of them remained small. Here, too, the initial changes occurred within three months, reaching a maximum at six months for 75% of the cavities. Closed cavities were smaller than the others, but those showing only a partial decrease averaged the same size as those not responding at all. Better results were obtained in patients infected with tubercle bacilli sensitive to streptomycin than in those infected with bacilli resistant to it. The significant point of isoniazid resistance appeared to be at 5 mcg. of the drug per cubic centimeter of Lowenstein-Jensen medium. Both infiltrations and cavities began to show improvement and reached initial rapid peaks within six months, corresponding roughly to development of full resistance to 5 mcg. of isoniazid. After this period the cavities continued to show improvement in only 25%, while almost all the infiltrations continued to show further benefit. It seems that, in the case of infiltrations, the benefit initiated by isoniazid was continued by natural factors, whereas in the case of cavities, the initial changes produced by the drug included local mechanical alterations that operated within the shorter period of six months. Symptomatic improvement occurred in almost all of the patients who showed roentgenologic improvement and in 60% of those showing no changes in their roentgen shadows. From the roentgenologic standpoint, isoniazid does not cure tuberculosis. Its use is attended with varying results ranging from excellent clearing in fresh, localized exudative infiltrations to poor results in fibrocavernous lesions. It should prove to be a valuable adjunct to the comprehensive treatment of pulmonary tuberculosis.

The Chemotherapy of Pulmonary Tuberculosis with Pyrazinamide Used Alone and in Combination with Streptomycin, Para-Aminosalicylic Acid, or Isoniazid. W. S. Schwartz and R. E. Moyer. Am. Rev. Tuberc. **70:**413-422 (Sept.) 1954 [New York].

One hundred eighty-one patients received 202 courses of treatment with pyrazinamide for periods up to 16 months, either alone or in combination with streptomycin, *p*-aminosalicylic acid (PAS), or isoniazid. Pyrazinamide used alone in a dosage of 2.8 gm. daily was found to be an effective drug in the treatment of pulmonary tuberculosis, but only for a short period of time. The administration of streptomycin, 1 gm. twice weekly, or *p*-aminosalicylic acid, 12 gm. daily, together with 3 gm. of pyrazinamide daily did not enhance the effectiveness of pyrazinamide or streptomycin, nor did it delay the emergence of *p*-aminosalicylic-acid-resistant or streptomycin-resistant tubercle bacilli. It was not possible to determine the drug susceptibility of tubercle bacilli to pyrazinamide in vitro. Chemotherapy with this drug and isoniazid was found to be an effective regimen in the treatment of pulmonary tuberculosis and was at least the equal of any combination of streptomycin, *p*-aminosalicylic acid, or isoniazid in use at the present time. In spite of the reported toxicity, the low incidence of jaundice encountered in this series prompts the recommendation that the combination of pyrazinamide and isoniazid be used more widely in the treatment of tuberculosis, particularly in streptomycin-resistant cases.

Anticoagulants, Antibiotics, and Block of Lumbar and Perivascular Sympathetic Nerves in Treatment of Postoperative and Puerperal Phlebothrombosis and Thrombophlebitis. E. Revelli. Minerva ginec. **6**:480-490 (July 31) 1954 (In Italian) [Turin, Italy].

A combined antispastic and anticoagulant therapy that is instituted early can improve the prognosis of thromboembolic complications. Unlike many authors who have reported incompatibility between the two types of therapy, Revelli obtained good results with this method in 56 patients with thromboembolism secondary to surgery and puerperium. As anticoagulants, heparin, bishydroxycoumarin (Dicumarol), and its derivatives, Tromexan and Marcoumar, can be used, but because of its transitory and immediate action heparin is the drug of choice. The anticoagulant should be given only after tests on blood coagulation, prothrombin time, fibrinemia, and heparin tolerance have been carried out. Because of the potentiating effect of the combined therapy, the doses should be smaller than those normally used. The antispastic treatment consists of anesthetic injections into the lumbar sympathetic nerves of 20 to 30 cc. of a 1% solution of procaine hydrochloride. The author tried the use of procaine for prolonged action in some patients; the effect lasted longer, and the local and psychic trauma was reduced. This form of procaine may be particularly recommended for patients in whom anticoagulants are contraindicated. The injections are made four hours apart and one hour before the following injection of anticoagulant. From 10 to 30 cc. of a 1% procaine hydrochloride solution is injected concurrently into the femoral canal. The author also administered antibiotics (streptomycin, chlortetracycline, and oxytetracycline) to the patients with septic thrombophlebitis and to those in whom phlebothrombosis was accompanied by elevated temperature. He believes that the retroperitoneal hemorrhage reported by various authors in patients receiving anticoagulants after sympathetic nerve block is due not to the combination of the two therapies but to technical errors. With the necessary precautions these two forms of therapy can be used together safely, and good results can be obtained.

Clinical Experiences with Tolerance and Range of Application of Deantigenized Animal Serums in Protein Deficiencies. K. Fritz. Beitr. klin. Chir. **189**:49-75 (No. 1) 1954 (In German) [Munich, Germany].

Adaequan-Resorba, a German proprietary deantigenized animal serum, was used in the course of two years for 1,000 infusions that were given to 315 patients with severe protein deficiencies. The preparation has a protein content of from 4.5 to 5 gm. per 100 cc. as compared to that of 7.43 gm. per 100 cc. of the natural cattle serum from which it was obtained. The preparation also contains 8.8 mg. of calcium, 340 mg. of sodium, 22.4 mg. of potassium, 474 mg. of sodium chloride, 3.06 mg. of phosphorus, 0.8 mg. of alkaline phosphate per 100 cc., 0.25 parts per thousand of free formaldehyde, and 0.45 parts per thousand of protein-bound formaldehyde. Of the 1,000 infusions 882 were given intravenously and 118 subcutaneously; 682 infusions were made with 250 cc., 310 with 500 cc., and 8 with 750 cc. The largest total amount of serum given to one patient was 2,500 cc. This was administered over a period of four and a half weeks. Twenty-five per cent of the patients had protein deficiencies after surgical interventions such as gastrectomies for carcinoma of the stomach; other patients had suffered severe loss of protein as a result of suppuration, fistula, ulcerative colitis, burns, consumptive diseases, and peritonitis. Patients of this type were, according to the author's experience as well as to that reported by other workers, particularly prone to undesirable side-effects, but only 6.4% of the infusions caused untoward reactions to the serum as compared to 4.9% associated with blood transfusions in a control group. The untoward reactions consisted of rise of temperature in 16 patients, mild secondary phenomena in 15, exanthem in 2, chills in 18, and mild shock-like reactions, with dyspnea, facial edema, cardiac embarrassment, tremor, and sweating in 13. Impairment of parenchymatous organs was not observed, and there was not a single death for which Adaequan might have been responsible. The mild secondary phenomena may be interpreted as unspecific protein reactions. Serologic studies demonstrated that shock-like reactions were not anaphylactic. Untoward reactions to the deantigenized animal serum, just as those to blood transfusions, cannot be avoided completely. But it is possible to prevent any risk to the patient if adequate precautionary measures are employed. Oehlecker's preliminary test is an indispensable procedure. It is advisable to give the patient an intravenous injection of 1 to 2 cc. of Adaequan diluted with isotonic sodium chloride solution 10 minutes before the infusion and to combine it with rutin. Slow drip infusions, with dextrose used for dilution, are recommended for patients with severe postoperative protein deficiencies who are particularly prone to untoward reactions. The absence of storage phenomena even in patients to whom high doses of Adaequan were given suggests that the proteins that are introduced into the body are used in a desirable way. It is, therefore, possible to practice protein substitution therapy with deantigenized animal serum almost free of risk to the patient and, thus, to limit the use of blood transfusions to those cases in which substitution of the morphological elements of the blood is required simultaneously or predominantly. Other valuable advantages of the preserved animal serum are the avoidance of inoculation hepatitis, the simplicity of its application because of its independence from serologic examinations, its economic use, and its almost unlimited stability.

The Protective Role of BCG in Murine Leprosy. R. D. Azulay. Internat. J. Leprosy **22**:61-64 (Jan.-March) 1954 [New Orleans].

Azulay points out that various reports including his own at the Havana Leprology Congress in 1948 confirmed the observation made by Fernandez in 1939 that persons who react negatively to lepromin can be made to react positively by means of BCG vaccination. Because a positive reaction to lepromin is generally regarded as an indication of resistance to leprosy infection, Azulay recommended that children removed to preventoriums should be protected by BCG vaccination. The National Leprosy Service of Brazil has two large-scale projects in progress. An observation period of at least 5 years and perhaps 15 years is needed before this can be properly evaluated. Although natural reactivity to lepromin signifies resistance to infection, there are some leprologists who are uncertain that induced positivity resulting from BCG vaccination has the same significance. Azulay undertook in 1952 a study of the effect of BCG vaccination in murine leprosy. Fifty-seven rats were inoculated with 20 mg. of BCG subcutaneously or intraperitoneally, and 115 days later they were inoculated with Mycobacterium leprae murium. Twenty rats were used as controls. The experiment extended over 10 months. The unvaccinated animals showed earlier and larger lesions than the vaccinated ones. Bacteriologically, there was no morphological or tinctorial alteration of the bacilli in the vaccinated animals, but the percentages of positive reactions in the visceral organs (spleen, kidney, lungs) were lower than in the unvaccinated animals, which shows a lesser tendency to diffusion of the infection in those previously inoculated with BCG. From the anatomopathological viewpoint, there was a much more extensive involvement by the leprous process in the animals not given BCG, although the histopathological reactions were the same in both groups. The author concludes that BCG has a protective effect against leprosy infection in rats. He feels that the results of this experiment will strengthen the view that BCG may be useful in the prevention of leprosy.

Blood Picture in Sulfone Treatment of Leprosy: Relation with the Dose and Blood Concentration of the Drugs. L. Nahas, H. Rzeppa and L. de Souza Lima. Internat. J. Leprosy **22**:22-30 (Jan.-March) 1954 [New Orleans].

Since anemia has been known to occur in patients with leprosy treated with sulfones, Nahas and co-workers determined the erythrocyte changes caused by the administration of different sulfones and the relation of these changes to the blood concentration of diaminodiphenylsulfone. The following drugs and doses were administered by mouth. Patients in group 1 were given 0.66 gm. of bis-methylene sodium sulfoxylate, daily, which

is equivalent to 0.333 gm. of diaminodiphenylsulfone. Patients in group 2 were given 0.9 gm. of the same compound daily, which is equivalent to 0.555 gm. of diaminodiphenylsulfone. Patients in group 3 received 0.2 gm. of diaminodiphenylsulfone three times a week. Patients in group 4 received 0.4 gm. of diaminodiphenylsulfone daily. It was found that blood concentrations of diaminodiphenylsulfone over 0.6 mg. per 100 cc. induced a moderate, progressive anemia. Blood concentrations smaller than that amount did not cause any alterations. Daily doses of 0.333 and 0.555 gm. of diaminodiphenylsulfone in the form of Diasone gave the same blood level. Thus the larger dose of this drug is excessive, presenting no advantage. The group of patients treated with 0.4 gm. of pure diaminodiphenylsulfone daily had a mean blood concentration of almost 1 mg. per 100 cc. Toxic reactions, chiefly anemia, appeared in all of these patients. It was also observed that the blood concentration of diaminodiphenylsulfone does not depend solely upon the amount of active substance contained in the drug. Toxic reactions and anemia observed in patients who received 400 mg. of pure diaminodiphenylsulfone did not appear in the group treated with 555 mg. of diaminodiphenylsulfone as Diasone. The blood level seems to be related to the chemical composition of the drug, and individual variations may be seen. The detection of anemia by hemoglobin determinations is held to be a safe index of the optimal individual dosages. When anemia occurred, normal blood values were attained after the interruption of treatment, without the use of antianemic treatment.

Therapeutic Experiences with Omnacillin "Forte" in the Course of the Grip-Epidemic 1952/1953. S. Greif. München. med. Wchnschr. **96:**947-948 (Aug. 20) 1954 (In German) [Munich, Germany].

Omnacillin "forte" is a proprietary preparation that contains 300,000 units of procaine penicillin, 100,000 units of penicillin G sodium, and dried Omnadin in an amount corresponding to 2 cc. of the commercial Omnadin. Omnadin is a proprietary mixture of reactive protein bodies from various nonpathogenic fungi, with lipoids from the bile and various animal fats. Omnacillin "forte" was given a therapeutic trial in 116 patients with bronchial or lobar pneumonia who were admitted to the District Hospital in Graz, Austria, in the course of the influenza epidemic of 1952-1953. These patients, in whom other therapeutic measures had failed, were divided in three groups. The first group was composed of 28 patients who did not respond or showed only a weak response to penicillin, although the pathogenic agents were sensitive to penicillin in vitro. The second group consisted of 34 patients with pathogenic agents cultured from their sputums that were not or only mildly sensitive to sulfonamide compounds, penicillin, streptomycin, oxytetracycline (Terramycin), and chlortetracycline (Aureomycin) in vitro; the patients showed little or no response to these drugs. The third group comprised 54 patients, predominantly of advanced age, whose general resistance from the first was low and who in contrast to the severe infection did not have leukocytosis but leukopenia. There was only little rise of temperature, which suggested a deficient function of the reticuloendothelial system. Despite in vitro sensitivity of the pathogenic agents, the patients did not respond to penicillin or sulfonamide compounds. In all 116 patients combined treatment with penicillin and Omnadin (Omnacillin "forte") was superior to treatment with penicillin, sulfonamide compounds, chlortetracycline, or oxytetracycline alone. Rapid improvement and final recovery resulted from Omnacillin "forte" in all the patients. It was thus proved again that in the course of treatment with antibiotics or chemotherapy sufficient defense powers of the organism also are indispensable for overcoming the infection.

Reserpine (Serpasil): Hypotensive Pharmaceutic Agent: A Review. A. R. Krogsgaard. Ugeskr. læger **116:**1185-1191 (Aug. 19) 1954 (In Danish) [Copenhagen, Denmark].

Reserpine, a new agent for the treatment of arterial hypertension, belongs to Rauwolfia alkaloids. It acts on the hypothalamus and causes a moderate reduction in blood pressure, definite sedative effect, and often gives good improvement in the subjective hypertension symptoms. The side-effects are few and unimportant. In graver hypertension it can advantageously be combined with other hypotensive substances, first of all with hydralazine (Apresoline). Improvement in the subjective symptoms may occur without sufficient fall in the blood pressure, in which case possible hypertensive changes in vital organs and the eyes may progress. If the blood values are not satisfactory, further therapeutic measures are necessary, such as supplementary treatment with other hypotensive agents.

PATHOLOGY

Structural Changes in the Lumbar Intervertebral Discs: Their Relationship to Low Back Pain and Sciatica. R. I. Harris and I. Macnab. J. Bone & Joint Surg. **36B:**304-322 (May) 1954 [London, England].

Harris and Macnab examined the intervertebral disks in 123 lumbar spines excised at routine autopsies. After a preliminary radiograph of the cadaver and of the excised spine, a careful dissection was carried out. The supraspinous and interspinous ligaments were inspected. The neural arches were then removed and the posterior joints and ligamenta flava were examined in detail. The intervertebral disks after examination in situ were divided first horizontally and then vertically. Pieces of the disks, ligaments, and posterior joints were subjected to microscopic examination. Information on the anatomic, physiological, and pathological variations that occur was obtained. The spine acts as an integrated whole, and damage sustained by one part frequently injures other structures in the spinal column. Thus disk degeneration may be associated with an extrusion of nuclear material; it may initiate degenerative changes in the posterior joints; it may predispose to tears of the posterior spinal ligaments; or it may give rise eventually to all of these lesions, any one of which may produce backache with or without sciatica. The sciatica may be referred pain or may be produced by nerve root pressure. Nerve root pressure in such instances is commonly due to an extrusion of nuclear material, but it may also be due to pressure on the nerve root within the foramen by a "squashed" disk or by a subluxated posterior joint. The relationship of these changes to the radiographic appearance of the spine was studied in detail. With the use of films taken with the patient bending, evidence of early degenerative changes may be obtained, tears of the supraspinous ligament can be detected, and abnormal movements of the posterior joints can be seen. Careful study of the anteroposterior and lateral projections will reveal evidence of subluxation of the posterior joints, chip fractures, and degenerative arthritis in the zygapophysial articulations and will clearly demonstrate overriding of the facets. Radiographs thus are of great value in the diagnosis of disk degeneration, and they are of greater value in the assessment of the secondary effects that have taken place.

The Natural History of Osteoid Osteoma, with a Report of 20 Cases. J. S. R. Golding. J. Bone & Joint Surg. **36B:**218-229 (May) 1954 [London, England].

Of 20 patients with microscopically confirmed diagnosis of osteoid osteoma, 7 were between the ages of 6 and 15 years, 6 were between 16 and 20 years, and 7 between 21 and 35 years. The femur was the site of the lesion in two patients, the tibia in nine, the foot in two, the humerus in one, the hand in four, and vertebrae in two. Pain, the outstanding clinical feature of the condition, was observed in all 20 patients. Other symptoms consisted of swelling in 11 patients, tenderness in 8, wasting in 4, limping in 3. Nine patients obtained peculiar relief from aspirin. A zone of bone sclerosis surrounding a small area of transradiancy presented the essential radiographic feature. An osteoid osteoma is a benign neoplasm of bone with distinctive clinical signs and symptoms. It is a pathological entity. It behaves in a way peculiar among benign tumors in that it is painful, causes widespread bone sclerosis outside its histological margins, and runs a self-limiting course. These three features are consequent on the highly vascular nature of connective tissue matrix in the early stages of the maturing lesion. Pain

occurs in other highly vascular lesions within a confined space. There is evidence that there is increased tension within the sclerosed bone. Certain other vascular lesions within bone result in widespread sclerosis outside the confines of the lesion, particularly in young persons. By analogy with the angiomata of skin and bone, spontaneous regression and a self-limiting course might be expected. In certain cases in which the radiological features are difficult to interpret, the disproportionately severe symptoms of pain and tenderness may well lead to the diagnosis of neurosis.

RADIOLOGY

Zürich Experiences with Irradiation Treatment of Carcinoma of Larynx and Hypopharynx, with Consideration of New International Stage-Grouping. K. Schärer. Schweiz. med. Wchnschr. **84:**1059-1063 (Sept. 11) 1954 (In German) [Basel, Switzerland].

Schärer reported recently on the results of irradiation treatment of 609 patients with carcinoma of the larynx and hypopharynx at the radiotherapeutic department of the District Hospital in Zürich, Switzerland. This report was based on a stage-grouping suggested by the Swiss workers Schinz and Zuppinger, according to which the primary tumor was graded by size and classified in one of four groups independently of metastases, which were classified separately in four groups. This classification was responsible for the differentiation of many various groups, each of which contained only a small number of cases, making a total evaluation difficult. The results of the irradiation treatment now have been based on the stage-grouping suggested by the International Committee on Stage-Grouping in Cancer and for the Presentation of the Results of Treatment of Cancers (I. C. P. R.) at the seventh international congress of radiologists in Copenhagen. This new classification simplifies matters, since observations on the primary tumor and on the metastases are combined in one stage. Four stages are suggested: stage 1, in which the carcinoma is limited to the mucosa, the larynx is freely movable, lymph nodes are not palpable; stage 2, in which the carcinoma has grown by infiltration, but does not exceed the larynx, the larynx is movable to a limited degree or not movable at all, lymph nodes are not palpable; stage 3, in which the carcinoma has grown beyond the larynx, or there are lymph nodes that are palpable but movable; stage 4, in which the carcinoma has grown through into the skin, or there are fixed lymph nodes, or distal metastases. The stages 1 and 2 are free of metastases, while metastases belong to stages 3 and 4. This classification is less exact than that of the Swiss workers but provides a better survey and allows for comparison of greater numbers. It takes into consideration the results as well as the prognosis of carcinomas because prognosis becomes considerably unfavorable in the presence of metastases. The author's results are as follows: Three-year recoveries: stage 1, 78%; stage 2, 52%; stage 3, 23%; stage 4, 6%. Five-year recoveries: stage 1, 50%; stage 2, 43%; stage 3, 16%; stage 4, 3%. Ten-year recoveries: stage 1, 17%; stage 2, 28%; stage 3, 8%; stage 4, 2%.

Radiology in Neonatal Respiratory Disorders. I. Donald. Brit. J. Radiol. **27:**500-503 (Sept.) 1954 [London, England].

Improvement in the survival of newborn infants requires a better understanding of the failure of pulmonary expansion and aeration. Asphyxia may be due to central or peripheral causes, and, in addition to atelectasis, other lesions may be responsible, for example, intraventricular hemorrhage, pneumonia, pulmonary immaturity, intrapulmonary hemorrhage, the effect of narcotic drugs, cerebral irritation, and raised intracranial pressure, and, less commonly, congenital lesions such as diaphragmatic hernia, esophagotracheal fistula, and cardiovascular anomalies. An accurate diagnosis is becoming more important because of the increasing possibilities of specific treatment. Donald describes studies on the radiological sequence of events in atelectasis. The data obtained have been correlated with clinical and autopsy findings. In many cases the atelectasis found at autopsy is secondary rather than primary. The association of hyaline membrane with atelectasis has been noticed increasingly. This membrane seals off large numbers of alveoli so that they either never expand or, having expanded, undergo secondary collapse. Death occurs usually between the ages of 3 hours and 3 days. Although at first the infant may have cried vigorously and had a healthy pink color, within hours or even minutes respiration becomes shallow with inadequate pulmonary ventilation, cyanosis deepens, and death occurs after repeated bouts of apnea. The origin of this membrane is still disputed. The author observed 115 babies with real, apparent, or threatened respiratory difficulty. Fifty-three of these babies died, and all of them were examined post mortem. Hyaline membrane was found in 20 of these 53 neonatal deaths. Radiological studies had been made on 89 of the 115 babies with respiratory difficulties. The author says that he never saw a baby die as the result of atelectasis with hyaline membrane after a radiograph had shown good aeration. There were 21 cases in which aeration was abnormal though not suggestive of hyaline membrane. Six of these apparently were neonatal pneumonia, two being proved post mortem. The remainder included cases of primary atelectasis and pulmonary immaturity, but the size of this doubtful group surely indicates the need for a more intensive study. Signs compatible with hyaline membrane were observed in 26 infants. Fourteen of these died, and the diagnosis was confirmed at autopsy. Radiological studies can distinguish between intrathoracic and intracranial disease. This is important, since augmenting respiration with respirators is neither indicated nor desirable, for example, in infants whose brains are already flooded with blood. Intensive antibiotic therapy may be indicated when the diagnosis of neonatal pneumonia can be reliably established. Radiographs may also show, in certain cases, that death is due to atelectasis or hyaline membrane, and in other cases they may show such a degree of nonaeration that ultimate recovery is impossible. In the intermediate group only the study of roentgenograms taken in sequence will give any indication of whether a child is overcoming its respiratory difficulties or likely to succumb to them.

Some Considerations on Cerebral Angiography Through the Carotid Artery. P. Conforti. Minerva chir. **9:**674-678 (Aug. 15) 1954 (In Italian) [Turin, Italy].

Cerebral angiography through the carotid artery is mainly indicated for supratentorial cerebral neoplasms, some complications following a cranial trauma, some vascular lesions of the brain, and confined suppurative processes of the brain. The technique can be carried out with great simplicity by a good radiologist and with a minimum of instruments. Local anesthesia is induced in most patients by injecting a 1% solution of procaine along the neurovascular fascia of the neck laterally. The solutions of contrast medium should be prepared with organic iodine in concentrations never to exceed 40% or be less than 35%. It is a good rule to take first an anteroposterior view of the skull, because this will tell whether to continue on the same side or on the contralateral side, since neither direct radiography nor electroencephalography indicates on which side the angiography should be carried out. The three radiograms are taken at the end of the injection, two seconds later and four seconds later, respectively. The commonest complications of this technique are a stimulation of the vagus in the neck, hemorrhage, hematoma of the neck, vasospasm and altered permeability of the cerebral vessels, cerebral edema, and iodine sensitivity reactions. These complications can, however, be avoided with adequate preparation of the patient, local anesthesia, correct puncturing of the carotid artery, and injection of the contrast medium at room temperature and at a moderate speed. This technique is contraindicated in patients in a state of severe shock and in those with hemophilia and hemorrhagic diatheses. Hypertension is not a contraindication. Conforti reports his good results in 66 patients on whom he performed cerebral angiography through the carotid artery. Transitory disturbances occurred in four patients and were caused by a true stimulation of the vagus nerve in the neck in one patient, a reflex spasm of the cerebral vessels without altered permeability in two, and hypersensitivity to iodine in the fourth.

BOOK REVIEWS

Nontuberculous Diseases of the Chest. Sponsored by American College of Chest Physicians. Editor: Andrew L. Banyai, M.D. Editorial committee: Seymour M. Farber, M.D., et al. Cloth. $18.75. Pp. 1139, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1954.

This encyclopedia on nontuberculous diseases of the chest is an important addition to current medical literature. The 37 contributors have covered the subject completely and succinctly, with an evenness of style and balance of space indicative of careful planning and excellent editing. No other available book on this subject is at all comparable to this one as a textbook for students or as a reference book for practicing physicians or for those who specialize in diseases of the chest. For any phase of this broad subject the reader may be interested, there is an authoritative article and a beginning bibliography.

Cancer: Race and Geography. Some Etiological, Environmental, Ethnological, Epidemiological, and Statistical Aspects in Caucasoids, Mongoloids, Negroids, and Mexicans. By Paul E. Steiner, Ph.D., M.D., Professor of Pathology, University of Chicago, Chicago. Cloth. $5. Pp. 363, with 73 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1954.

This monograph is chiefly concerned with the etiological implications of the racial and geographical differences in patients with cancer. The analyses are based on a study of racial distribution and peculiarities found during an investigation of 6,072 patients with cancer who were observed in 35,293 autopsies performed at the Los Angeles County Hospital from 1918 to 1947. They deal primarily with the 20 most lethal types of tumors, namely, those of the stomach, large intestine, lymph nodes, lung, breast, pancreas, uterus, intracranial organs, prostate, urinary bladder, gallbladder, ovary, skin, soft parts, mouth, esophagus, kidney, larynx, bone, and liver, and a few tumors of special interest (carcinoma of male breast and penis, chorioepithelioma, Kaposi's sarcoma, malignant melanoma, nasopharyngeal and cervical lymph node cancers, retinoblastoma, and salivary gland tumors). The three large racial groups (Caucasoids, Negroids, and Mongoloids), including white persons, Mexicans, Negroes, Japanese, Chinese, and Filipinos, composing the population of Los Angeles are considered both in relation to each other and to the original stocks living in other countries, continents, and environments. The study was undertaken to determine the value of the method of comparing the occurrence and frequency of cancer in several ethnic groups in two or more environments and to obtain information on the relative importance of the hereditary (racial) and environmental factors active in its causation. While the data used relate to the relative frequency and not to the incidence of cancer in the populations analyzed, they are based on autopsy observations and not on notoriously unreliable clinical record (morbidity) or death certificate information. They have been interpreted, moreover, by a pathologist well versed in cancer and with full appreciation of the limitations attached to the data. For these reasons, the volume not only should provide a source of valuable scientific knowledge, even when controversial interpretations are offered, but also should serve as a stimulating guide in any future search into the cause of cancer. The well-chosen bibliography included in this book should also prove most useful in this respect. Commenting on the various racial, geographic, regional, and sex differences in cancer, the author states that on critical analysis they indicate environmental rather than hereditary factors in etiology. The genetic factor is considered as possibly important in determining whether environmental factors are at subthreshold or suprathreshold carcinogenic levels. In these conclusions, the author joins previous investigators on environmental cancer, who have emphasized the importance of increased knowledge on environmental carcinogenesis as the basic requirement for achieving an effective control of cancer by preventive measures.

Stone in the Urinary Tract. By H. P. Winsbury-White, M.B., Ch.B., F.R.C.S., Senior Surgeon at St. Peter's Hospital and St. Paul's Hospital for Urological Diseases, London. Second edition. Cloth. $16. Pp. 328, with 144 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3; Butterworth & Co., Ltd., 4-6 Bell Yard, Temple Bar, London, W.C.2, England; 1367 Danforth Ave., Toronto 6, Canada, 1954.

This volume is based on the author's personal experience in the management of 862 patients with urinary calculi. The subject is presented in a comprehensive manner. The author has assembled this material because he believes that so large a subject cannot be dealt with adequately in the space usually allotted to it as a part of a work on general surgery or even in a urological textbook. What is known about the cause of urinary calculi is carefully reviewed in the light of modern concepts of diet, heredity, race, vitamin deficiency, urinary infection, metabolic imbalances, and obstructive uropathy. The composition and general characteristics of urinary calculi are covered in their relation to causal factors. The pathology, symptoms, signs, and diagnosis of calculi in each portion of the urinary tract are dealt with in separate chapters. Nonoperative and operative treatment of urinary calculi are considered in the light of the author's experience and possible complications from either method are reviewed. The author seems to have read almost everything ever printed on this subject, and the historical data are interesting and instructive. This book deserves a place in every medical school library and in the collection of every physician or surgeon especially interested in the study or treatment of urinary calculi.

Protozoology. By Richard R. Kudo, D.Sc., Professor of Zoology, University of Illinois, Urbana. Fourth edition. Cloth. $10.75. Pp. 966, with 376 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1954.

The fact that this textbook has gone into a fourth edition is evidence of its value. It has been eight years since the third edition appeared, and, although there have been no changes in the table of contents, the book has been enlarged, the number of illustrations has been increased, and many improved drawings have replaced older ones. Many new references have been added. The author index is now separate from the subject index, and the author has achieved his goal to set forth "introductory information on the common and representative genera of all groups of both free-living and parasitic Protozoa." The new edition should be a welcome addition to the library of public health workers, students of biology, laboratory workers engaged in identification of unknown specimens, and all persons whose work involves familiarity with protozoa.

Office Gynecology. By J. P. Greenhill, B.S., M.D., F.A.C.S., Attending Obstetrician and Gynecologist, Michael Reese Hospital, Chicago. Sixth edition. Cloth. $7.75. Pp. 517, with 127 illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1954.

This new edition of a small compilation presents what the author considers the important features of office care of patients with gynecological problems. Limitations of space prevent the author from much consideration of background material and alternative opinion. Treatment that cannot be applied in the office is given only passing mention, and some diagnostic procedures are described in too little detail. Several authorities in special fields have contributed useful chapters. The book, designed for the general practitioner, serves a valuable purpose and is perhaps the best of such presentations. It is well printed and contains a number of helpful illustrations. It is to be highly recommended within the limits of its purpose.

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

QUERIES AND MINOR NOTES

EPILEPSY

TO THE EDITOR:—*A woman, aged 63, mother of nine children, all healthy and married with families of their own, five years ago had a seizure that was tentatively diagnosed as cerebral thrombosis. A year later she had a second attack and nine months later, a third. After the third incident she was taken to a neurologist who hospitalized her for several days. Ventriculography was done after the fluid content of the lateral ventricles was removed. She had no seizures for over a year and then had another. She was taken to a clinic where a diagnosis of grand mal was made. Medication has been with diphenylhydantoin (Dilantin) sodium, phenobarbital, and pentobarbital sodium. Can you give me any information about other treatment that might be of benefit? There is no history of injury or serious illness of any kind.* *M.D., Indiana.*

ANSWER.—It apparently has been determined that this patient's infrequent seizures are secondary to a cerebral lesion and not a manifestation of other systemic illnesses. The onset of epilepsy in a 58-year-old patient is suggestive of a focal cerebral lesion. Prior to beginning symptomatic therapy, it is of paramount importance to determine whether this pathological condition is secondary to brain tumor or degenerative damage in the brain. It may be assumed that the repeated examinations, including a ventriculogram, an electroencephalogram, and neurological examination, and the duration of five years since the onset of symptoms make the diagnosis of tumor unlikely.

Treatment of epilepsy must be individualized. Medical therapy remains the mainstay of treatment, but sociologic and psychological factors must be considered. It is necessary to advise the patient on how to avoid or control precipitating factors. Alcoholic beverages should be prohibited. The patient should avoid excessive fatigue and environmental tension. A few patients with infrequent seizures will prefer an occasional convulsion to regular medication. Most patients should, however, be urged to use medication. Diphenylhydantoin and phenobarbital remain the drugs of choice, since they are safe, inexpensive, and effective in most patients. Apparently this patient has tried these drugs, and if they have proved effective in controlling the seizures they should be continued. If her previous dose has proved inadequate it would be well to increase the dose gradually to an optimal level. Diphenylhydantoin may be used in doses from 0.3 to 0.6 gm. daily and phenobarbital, in doses from 0.1 to 0.3 gm. daily. Medication in these dosages usually controls the infrequent seizures described here. Often the combination of phenobarbital and diphenylhydantoin in therapeutic doses proves more effective than either alone.

VISION TEST

TO THE EDITOR:—*I have a vision test cabinet designated to be used at 10 ft. but wish to express the test results in terms of 20 ft. Is it correct to say that a patient who reads the 10 ft. line at 10 ft. has 10/10 vision and that this is equal to 20/20 vision? If not, please give me the conversion factor.*

Albert Abraham, M.D., Morristown, N. J.

ANSWER.—It is correct to say that a patient who reads a 10 ft. line at 10 ft. has 10/10 vision, but this is not the same as 20/20 vision. Moreover, there is no conversion factor that will make such a transposition proper. The first number in the designation (which is not a fraction) indicates the distance at which the test is performed. If the number is to have any meaning to anyone other than the examiner, it should not be converted to any other value. The lower number indicates the symbols that have details that subtend one minute of an arc at that particular distance. Linksz (*Am. J. Ophth.* **37**:803, 1954) suggests the use of the snellen as an international unit of visual acuity. Under such a system 10/10 vision or 20/20 would equal 50 snellen; 10/20 or 20/40, 25 snellen; 10/40 or 20/80, 12.5 snellen, and so forth. If desired, one could place a parenthesis after the snellen designation to indicate the distance at which vision was tested.

OSTEOGENIC SARCOMA IN PREGNANCY

TO THE EDITOR:—*A 33-year-old woman who has had five children is in the sixth month of her sixth pregnancy. A paraplegia recently developed, and now the patient suffers a great deal from mass reflexes and an adductor spasm. The spinal canal has been explored and decompressed. The lesion is an osteogenic sarcoma that arises from the body of the sixth thoracic vertebra. There are no known metastases. 1. How should the child be delivered? 2. What palliative treatment for the mass reflexes and the adductor spasm should be used? 3. How should the sarcoma be treated? 4. What is the life expectancy of such a patient?*

R. R. Grayson, M.D., Perryville, Mo.

ANSWER.—An attempt to deliver the child vaginally would serve no useful purpose. Osteogenic sarcoma that has progressed to the point of transecting the spinal cord can be expected to metastasize within a short period of time. The expected duration of life, in the absence of any possible therapy, would certainly be not more than six months. The treatment of choice for the primary lesion would be deep x-ray therapy, but no reversal of the neurological condition could be expected. If the patient's general status can be maintained, the pregnancy should be carried as nearly as possible to term and delivery effected by cesarean section. Appropriate measures for the fixation of the spine, the relief of muscular disabilities, and the prevention of contractures should be instituted. For delivery either general inhalation anesthesia or local infiltration can be used.

GUNSHOT WOUND OF AORTA

TO THE EDITOR:—*A man was shot by a .22 caliber pistol through the abdomen, the bullet penetrating the aorta 2 in. (5.08 cm.) above the bifurcation. Would the impact of this bullet through the abdominal wall drop the man at once, or could he, under strain, continue to run a short distance? How long would it be before he would lose consciousness from hemorrhage? How much immediate pain would be felt from the impact of the bullet?* *M.D., Nebraska.*

ANSWER.—The loss of consciousness from hemorrhage would depend on the size and shape of the hole made by the bullet in the aorta and on the extent to which the hole in the aorta may have been protected by periaortic tissue. A widely gaping hole in the aorta would be almost immediately incapacitating. Instances are known in which a pellet from a shotgun or a .22 caliber bullet has made a slit-like opening in the aorta that has not caused disability or unconsciousness for a period of several minutes or longer after the wound was incurred. Thus, if there was a layer of retroperitoneal fat around the aorta and if the bullet made a slit-like defect in the aorta, the wounded man might continue to run for a considerable distance. As to the immediate pain that would be felt from the impact of the bullet, many persons who have sustained gunshot wounds describe the first effect of the wound as resembling that of a blunt impact. Thus, a man who is shot in the abdomen may feel no more immediate discomfort than would be sustained if he were struck by a small stone. The discomfort from peritoneal irritation would not appear until minutes or hours had passed.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

LENS REPLACEMENT AFTER CATARACT REMOVAL

TO THE EDITOR:—*What is the present status of plastic lens replacement after cataract removal?*

John L. Ingham, M.D., Easton, Pa.

ANSWER.—The majority of conservative ophthalmic surgeons in this country (judging by informal remarks at recent meetings) do not favor the placement of a plastic lens in the eye after cataract extraction. Vail states, "In view of the many, often formidable, complications associated with the usual cataract extraction, it seems at this time foolhardy to court disaster by inserting a foreign body into the eye, where the gain is relatively of little importance. Each ophthalmologist should ask himself truthfully whether or not he would want this operation on his own eye and be guided by his answer in dealing with the patient." (1952 Year Book of the Eye, Ear, Nose and Throat, edited by D. Vail and J. R. Lindsay, Chicago, Year Book Publishers, Inc., 1953, p. 86.) The procedure must still be considered in the experimental stage.

STATUS OF CRANIOTOMY

TO THE EDITOR:—*What is the present medically orthodox status of craniotomy?* *J. J. Seelman, M.D., Milwaukee.*

ANSWER.—Current obstetric thinking reserves craniotomy for the pelvic delivery of a fetus that has succumbed to an intrauterine death or that possesses fetal abnormalities incompatible with normal extrauterine life. With the development of x-ray techniques applicable to the obstetric patient, more accurate evaluation of fetomaternal relationships is possible. Such information allows improved management of labor. Moreover, improved techniques, including extraperitoneal cesarean section and antibiotics have resulted in the increasing use of hysterotomy for the resolution of obstetric problems. Hence, there has been a steady decline in resorting to craniotomy as an obstetric procedure. It is reserved for the rare cases of a neglected patient in labor with an intrauterine death or a baby with hydrocephaly.

CYSTIC FIBROSIS OF PANCREAS

TO THE EDITOR:—*What is the treatment of rectal prolapse as a complication of cystic fibrosis of the pancreas? What is the prognosis for children with cystic fibrosis of the pancreas if they are given adequate treatment with pancreatic granules consistently?*

Charles L. Conklin, M.D., Corpus Christi, Texas.

ANSWER.—Adequate treatment with pancreatic extract is not thought to improve the prognosis for children with cystic fibrosis of the pancreas, nor is the life expectancy apparently increased by its administration. Some pediatricians feel that children with this disease can be adequately treated without the use of any pancreatic extract at all. The use of antibiotic drugs has been the major factor in improving the prognosis for children with this disease. Cystic fibrosis of the pancreas is a disease of variable severity, and consequently some children may be expected to be more severely afflicted than others. The treatment of rectal prolapse is modified by many factors, such as age, size, weight, and degree of prolapse. The influence that cystic fibrosis of the pancreas might have would depend on the severity of the disease.

SENSITIVITY TO HORSE SERUM

TO THE EDITOR:—*I wish to obtain information on sensitivity testing for horse serum prior to administration of tetanus antitoxin. The ophthalmic test has been suggested but, as nearly as I can determine, has not had wide acceptance. I have written to three manufacturers of biologicals regarding the problem but have not obtained a definite answer. I have the impression that dilution of horse serum for testing has gained favor without sound clinical evidence.*

M.D., California.

ANSWER.—In view of the severe reactions and deaths that have occurred following the administration of tetanus antitoxin, it would be a great error on the part of a physician not to make a sensitivity test before injection of a horse serum. Nevertheless, the reliability of such a test sometimes seems doubtful. Dropping material in the conjunctival sac has not appealed to most physicians, and so the ophthalmic test has never been used extensively. Anaphylactic shock and death have followed administration of horse serum antitoxin to a person in whom both ophthalmic and intracutaneous test were negative. Similar accidents may have happened with undiluted antitoxin, but it is not likely that they would be reported. As little as 0.1 cc. of the substance injected intradermally has been known to cause fatal anaphylactic shock. With the highly refined antiserums now available, serum reactions are much less common than many years ago; however, there is often some concern in respect to tetanus antitoxin. If the patient is known to be allergic or found to be sensitive to horse serum, bovine tetanus antitoxin will often solve the problem.

SPALTEHOLZ TECHNIQUE FOR SPECIMENS

TO THE EDITOR:—*I have seen specimens, such as an embryo, that have been treated in such a way that the soft tissues are translucent and the bony parts show through, from the absorption of some contrast dye. Do you have any references for the process involved in such preparations?*

Benjamin Trachtman, M.D., Brooklyn, N. Y.

ANSWER.—The process is based on the well-known Spalteholz technique. The clearing of embryos is effected by fixation and dehydration in 95% alcohol for two to four days, then treatment with 1 to 2% solutions of potassium hydroxide. The specific staining of osseous structures is obtained by immersing the thoroughly cleared embryos or fetuses in weak dilutions of alizarin red in potassium hydroxide and preserving in pure glycerine or in methyl salicylate (Dawson: *Stain Technol.* **1**:123, 1926. Lipman: ibid. **10**:61, 1935. Williams: ibid. **16**:23, 1941). Finished preparations, mounted in polished plastic blocks, may be obtained from biological supply houses.

ECZEMA

TO THE EDITOR:—*Is there an effective and safe medicine for eczema of the contact variety that can be given intravenously?*

M.D., Pennsylvania.

ANSWER.—It is seldom necessary to use intravenously administered drugs for contact eczema. Corticotropin (ACTH) given intravenously is effective and safe when used properly, but its use is not necessary except in unusual cases in which the contact dermatitis is so severe as to incapacitate the patient. Strontium bromide is sometimes used for a sedative effect, and calcium salts are also used, but their effectiveness is questioned.

ELECTROCARDIOGRAPHS

TO THE EDITOR:—*Please explain the significance of so-called conus block, in other words, the small r=r′ often seen in electrocardiograms, that often show marked "clockwise rotation" but are otherwise within normal limits, including QRS intervals of 0.1 sec. or less.*

Horace L. Wolf, M.D., Amarillo, Texas.

ANSWER.—M-shaped QRS complexes in right precordial leads, in an otherwise normal electrocardiogram, may be caused by: 1. The manifestation of normal potentials of the basal portions of the right ventricle, particularly the crista supraventricularis, an area reached last by the advancing wave of ventricular depolarization. Its reflection in certain electrocardiograms is due to the particular rotation and position of the heart relative to the chest electrodes. The duration of the resulting rSr′ complexes does not exceed the QRS duration in other leads by more than 0.01 sec. 2. An abnormal delay of impulse spread in the same area caused by a focal block in the periphery of the conduction system. Under such circumstances the rSr′ complex in right precordial leads is prolonged (>0.11 sec.) in contrast to the normal QRS duration in all other leads. 3. An incomplete right bundle branch block. Here, the QRS duration in precordial and limb leads does not exceed 0.11 sec., but the pattern in all these leads reminds one of the familiar pattern of a complete right bundle branch system block.

The differentiation of these three conditions is not always possible and so is often arbitrary. It should be based on a correlation with clinical data. Whereas the first is seen in perfectly normal hearts, the second and third may be a manifestation of right heart strain; on occasion the conversion of the latter two patterns to that of complete right bundle branch system block can be seen in follow-up tracings.

POSTPARTUM AMENORRHEA

To the Editor:—*In* The Journal *of Aug. 28, 1954, page 1624, a question is asked in regard to postpartum amenorrhea. In my paper "Undeveloped Secondary Embryo as a Cause of Hemorrhage in the Puerperium"* (West. J. Surg. **56:448** *[Aug.] 1948), I explained that this hemorrhage is not due to retained secundae but is caused by the remains of a blighted secondary embryo that is being extruded at that time, late in the puerperium. A number of women with this condition whom we curetted had amenorrhea for from 6 to 18 months. Sheehan's syndrome is not a factor, as the women did not suffer from severe shock and had no other symptoms associated with this syndrome. Menstruation returns after the prolonged delay, and the women are well. We tell these women who have postpartum curettage that their menstruation may be delayed for a long time and they are not to be concerned about it. No special treatment is necessary.*

Morris Leff, M.D.
1831 Grand Concourse, New York.

To the Editor:—*In an otherwise excellent discussion of postpartum amenorrhea* (The Journal, *Aug. 28, 1954, page 1624), your consultant seems to have neglected to mention the most probable etiological factor in this case, namely, curettage. This procedure, particularly when done in the early postpartum period, is certainly not a rare causative factor in prolonged or permanent amenorrhea.*

Alphonse J. Degasis, M.D.
504 E. Las Tunas Dr., San Gabriel, Calif.

DEFORMITIES IN STILLBORN INFANT

To the Editor:—*In* The Journal *for Oct. 23, 1954, page 804, a physician inquires as to the chances of future abnormal infants in a primipara who had given birth to a stillborn infant whose external deformities included cleft palate and harelip. There was no history given of maternal viral infection during the pregnancy. The consultant's statement that "this patient runs no greater risk of future abnormal pregnancies than does any other multiparous woman" deserves further comment, since it might lead the reader to draw erroneous general conclusions concerning the repeatability of harelip and cleft palate, as well as other congenital deformities. From a reliable Danish study (Fogh-Andersen, 1942) there is summarized by Sorsby (Clinical Genetics, St. Louis, C. V. Mosby Company, 1953) the following information. The incidence of harelip with or without cleft palate in the general population was found to be about 1.12 per 1,000 total births. The incidence of these defects in children born after an affected sibling rises to 67 per 1,000 births. After having a child with such a defect, the risk of the repetition of the defect in a subsequent child in any given couple, then, is about 60 times that of the general population. In the case under consideration, however, the above schedule of repeatability probably would not apply, inasmuch as the cleft palate and harelip did not represent the complete syndrome but were only two among other severe defects, some of which presumably led to the birth of a nonviable child. To quote Sorsby: ". . . hare lip and cleft palate occur not uncommonly in children born with other deformities and who do not survive. . . . Hare lip and cleft palate in association with other malformations may well have a different causation from the uncomplicated cases seen at surgical clinics." In the case at hand, then, the question might more properly involve the repeatability of congenital abnormalities in general. Murphy (Congenital Malformations, ed. 2, Philadelphia, J. B. Lippincott Company, 1947) found that the patient who had given birth to one congenitally deformed child ran nearly 24 times the risk of the normal population of giving birth to a second deformed child. Furthermore, the mother who had borne two deformed infants appeared to run nearly 75 times the normal risk of producing a deformed child in subsequent pregnancies. Such increased risks may be revealed by patients who have aborted as well as those who have gone further in pregnancy only to be delivered of deformed infants. Hertig and Rock* (Am. J. Obst. & Gynec. **58:968,** *1949) showed histologically that a high percentage of spontaneous abortions represent true severe congenital abnormalities. Murphy reported that "miscarriages, stillbirths, and premature births occurred more often than would be expected by chance in the pregnancies immediately preceding and following the pregnancy which resulted in the birth of a congenitally malformed child."*

What advice to give to parents of a deformed child is the most practical point to be made. Since it is not statistically accurate to state that the production of a congenitally deformed child (in the absence of maternal infection in the first trimester) indicates no additional risk in subsequent pregnancies, the parents' questions must be answered with great care. It is desirable to inform the parents as tactfully as possible of the approximate risks without arousing undue alarm as to their future reproductive prospects. Such parents have a right to know, in some degree, at least, their reproductive handicap. For his part, the obstetrician protects himself from repercussions by sharing "risk" information with his patients in advance. The possibility of improving the quality of the spermatozoa by the methods mentioned is certainly a slim one. The possibility of improving the quality of future offspring by medical treatment directed toward the man, while worthy of trial, still largely represents an unknown quantity.

Charles H. Hendricks, M.D.
Western Reserve University,
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BCG VACCINE

To the Editor:—*I would like to present data on bacille Calmette Guérin vaccination that support the answer given in* The Journal *for July 3, 1954, page 949, regarding the use of BCG vaccine in a tuberculin-negative person, and at the same time take issue with certain of the criticisms of Drs Myers and Farbers in* The Journal *for Sept. 4, 1954, page 94. The questions to be resolved are (1) the avirulence of the BCG culture and (2) the specific protective value of BCG vaccine.*

I have conducted various studies in the laboratory and in the field to determine the value of BCG vaccine from 1928 to the present time, excluding the years between 1941 and 1946. During this period my associates and I have observed a definite decrease in the virulence of the BCG cultures in our collection and not an increase. We have observed changes in the tuberculogenic and cultural characteristics unrelated to changes in virulence; similarly, some cultures show cord formation but remain avirulent. In the course of these studies, during which time we have used large numbers of guinea pigs, we have never observed progressive tuberculosis in guinea pigs injected with amounts as large as 30 mg. of the culture nor in hamsters injected intraperitoneally with 10 mg. of the culture. Considering the large numbers of animals used in the various BCG laboratories throughout the world over a period of 30 years, it is surprising that those working with this culture have not reported the occurrence of generalized tuberculosis even occasionally in animals injected with the culture. Assuming that the BCG culture has increased in virulence, it would therefore be expected that a significant number of cases of tuberculosis would have occurred among the many millions of persons vaccinated throughout the world with BCG vaccine during and since the end of the war under the auspices of UNICEF and among the millions vaccinated in Japan both during and after the war. Many of these persons were living under the most adverse conditions. Furthermore, BCG vaccination is being continued in the different countries and has been made compulsory in some.

The evaluation of the specific protective value of BCG vaccine in man is complicated by the naturally falling mortality and morbidity rates from tuberculosis. To appraise as

objectively as possible the value of BCG vaccine, we have carried out a controlled study since 1936. In 1936-1937 we administered BCG vaccine to 1,551 tuberculin-negative Indians of preschool and school age while 1,457 tuberculin-negative Indians of comparable age and sex were not vaccinated and served as controls. Both groups were followed annually by tuberculin tests and roentgenograms of the chest for from 9 to 11 years. At the end of 13 to 15 years, among the BCG-vaccinated 12 had died from tuberculosis and 59 from nontuberculous causes. Among the controls 65 had died from tuberculosis and 63 from nontuberculous causes. None of the vaccinated died from miliary tuberculosis, while 19 of the 65 tuberculous deaths among the controls were due to miliary tuberculosis (Aronson and Aronson: J. A. M. A. **149:***334, 1952). An analysis (Stein and Aronson:* Am. Rev. Tuberc. **68:***695, 1953) of the 13,660 chest roentgenograms of the vaccinated and the 12,920 roentgenograms of the controls showed that among the vaccinated 4.1% had pulmonary lesions of tuberculosis, while among the controls 16.4% had such lesions. Miliary tuberculosis was observed in 0.7% of the controls and in none of the vaccinated. The highest incidence of pulmonary tuberculosis among the vaccinated occurred among those who had been vaccinated with two lots of BCG vaccine of low antigenicity. The studies of Hyge* (Acta tuberc. scandinav. **21:***1, 1947), Dahlström and Difs* (Acta tuberc. scandinav *[supp. 27]* **25.***1, 1951), and others are in accord with our own observations.*

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CANCER OF THE PROSTATE

To the Editor:—*The discussion in* The Journal *for Sept. 18, 1954, page 292, of the relationship of testosterone to carcinoma of the prostate left the impression that, since attempts in animals to produce true neoplasms with testosterone have been unsuccessful, there is no danger in the administration of the male sex hormones to humans. The incidence of cancer of the prostate in men past the age of 70 has been reported to be 28%. Incidences ranging from 15% to 30% have been reported in routine autopsies in the older age brackets. In nearly one-third of the male population over 50 years of age there is a possibility of development of cancer of the prostate. Those physicians who have to treat this difficult condition are aware of the potential dangers of the indiscriminate use of the male sex hormone in men past the age of 50. Since the beneficial effects are questionable and restoration of potency does not occur, there seems little indication for its routine use. Many men have occult carcinoma or a quiescent focus in the posterior lobe. Although testosterone may not initiate carcinoma, there is very definite evidence that it might light up an occult cancer or a quiescent focus.*

The answer to the question what happens to spermatogenesis after vas ligation (J. A. M. A. **156:**207 [Sept. 11] 1954) *did not mention what actually happens to the sperm that are continually being produced even after the procedure. It is believed that certain cells of the tubules become spermiophages, thus destroying sperm. However, spermatic granulomas at the distal cut end of the vas are sometimes encountered.*

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DESENSITIZATION TO WASP STING

To the Editor:—*In* The Journal, *Aug. 28, 1954, page 1621, is an answer to a question concerning desensitization to wasp sting. I beg to express a different opinion on a few of the comments in the answer. First, it was doubted whether it was necessary to desensitize in the case in question. The inquirer mentioned edema of the glottis and generalized urticaria. I believe such a patient is in serious danger of even a fatal reaction from the next sting, possibly before any medical aid can be obtained. The problem of permanency in a desensitization program cannot be passed off in a positive or negative statement so readily. None of us is familiar with the duration of desensitization, although, in my experience with a large number of patients who have been desensitized against the Hymenoptera order, in most instances lasting immunity has been retained over a period of many years without repeated courses of treatment. The effectiveness and the permanency of treatment can only be judged by clinical experience of repeated exposure. After immunization treatment, some patients indicate that bees that always selected them previously no longer come near them. Others, after treatment, have had a bee sting that was a minor incident with little or no local reaction and no systemic effect.*

Unfortunately, the call for the extracts of the various members of the Hymenoptera order is so infrequent that the average drug house cannot afford to supply them. The result is that the few products available are of questionable value. It is the hope of the committee on insect allergen of the Research Council of the American Academy of Allergy that such materials will be available for the cases that come up and for the physicians who want to obtain them. Under such circumstances cost will not be prohibitive and the allergen will be reliable.

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ACNE VULGARIS

To the Editor:—*In the Aug. 21, 1954, issue of* The Journal, *page 1547, the answer given to Dr. Fisher's question about the topical use of estrogens for the treatment of acne was, I feel, erroneous. For six years I have been treating cases of acne, refractory to x-ray and all other orthodox measures, with estrogens topically. The drug used is Premarin lotion, 1 mg. of conjugated estrogens (equine) per cubic centimeter. It is a generally accepted opinion that disturbance of sebaceous gland activity due to a relative increase in the androgen-to-estrogen concentration in the skin is an important factor in the cause of acne vulgaris. The local application of estrogens, then, would be rational in women with "premenstrual flares." Of the 90 cases of chronic, severe cystic acne vulgaris that I have treated with conjugated estrogens, 80% have had successful outcomes. Only a rare systemic side-reaction was noted. Since the publication of my studies* (J. Clin. Endocrinol. **12:***751, 1952;* Postgrad. Med. **15:***503,1954), the work has been widely confirmed (Holbrook:* Wisconsin M. J. **52:***425, 1953; Sawicky and others:* A. M.A. Arch. Dermat. & Syph. **68:***17, 1953; Whitelaw:* J. Clin. Endocrinal. **11:***487, 1951). I do not see any rationale for progesterone therapy, and on the basis of present clinical evidence I feel that testosterone is definitely contraindicated. I strongly believe that estrogens, topically applied, if in correct dosage, will offer the relief sought by many sufferers for this unsightly and disfiguring condition.*

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SPERM COUNT FOLLOWING VASECTOMY

To the Editor:—*The answers given to the problem of continued sperm counts following vasectomy in* The Journal *for Sept. 25, 1954, pages 459-460, do not take into consideration the most likely possibility in this case. In several hundred vasectomies done in this clinic in the past 10 years, there have been four cases of continued high sperm counts. In all cases it was later shown that the same vas was ligated twice—once on the side of the testis involved and again through the midline of the scrotum. It is quite easy to make this mistake in a scrotum that is pendulous and in which the vas and spermatic cord are not easily identified. In all four cases, a second ligation was later done and the sperm counts promptly dropped to zero.*

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